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From: Yaen, Christopher  
Sent: Friday, April 26, 2002 12:14 PM  
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Subject: 09815306

392989

could you get this reference

bulfone-paus s et al Transplantation 2000 Apr 15;69(7):1386-91

10798759

Christopher Yaen  
Patent Examiner  
Art Unit 1642  
CM1-Rm 8E18  
Mail Box 8E12  
703-305-3586

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Fr m: Yaen, Christopher  
S nt: Wednesday, April 24, 2002 6:24 PM  
To: STIC-Biotech/ChemLib  
Subject: 09815306

could you please run a sequence search on seq id no. 1 and also run an oligo search

Thanks

Christopher Yaen  
Patent Examiner  
Art Unit 1642  
CM1-Rm 8E18  
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703-305-3586

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Online time: \_\_\_\_\_

TYPE OF SEARCH:

NA Sequences: \_\_\_\_\_  
AA Sequences: \_\_\_\_\_  
Structures: \_\_\_\_\_  
Bibliographic: \_\_\_\_\_  
Litigation: \_\_\_\_\_  
Full text: \_\_\_\_\_  
Patent Family: \_\_\_\_\_  
Other: \_\_\_\_\_

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Sequence Sys.: \_\_\_\_\_  
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Other (specify): \_\_\_\_\_

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OM protein - protein search, using sw model

Run on: April 25, 2002, 11:05:40 ; Search time 10.81 Seconds

(without alignments)  
769,927 Million cell updates/sec

Title: US-09-815-306-1

Perfect score: 1185  
Sequence: 1 MNKSGPMKSGILLVSNL.....HKIDNYLKLCRIIHNNG 227

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 100059 seqs, 36664827 residues

Total number of hits satisfying chosen parameters: 100059

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : SwissProt\_39:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	1185	100.0	227	1 PRL_HUMAN	P01236 homo sapien
2	1168	98.6	227	1 PRL_MACMU	P55151 macaca mula
3	959	80.9	227	1 PRL_PIG	P01238 sus scrofa
4	952	80.3	227	1 PRL_RABIT	Q28632 oryctolagus
5	938	79.2	228	1 PRL_FELCA	P46403 felis silve
6	908.5	76.7	228	1 PRL_TRIYU	O62781 trichosurus
7	892.5	75.3	228	1 PRL_MONDO	O62819 monodelphis
8	887	74.9	199	1 PRL_CAMDR	P22393 camelus dro
9	877	74.0	229	1 PRL_CAPHI	Q28318 capra hircu
10	876	73.9	199	1 PRL_HORSE	P12420 equus cabal
11	876	73.9	229	1 PRL_BOVIN	P01239 bos taurus
12	875	73.8	229	1 PRL_SHEEP	P01240 ovis aries
13	861	72.7	199	1 PRL_BALBO	P33088 balaenopter
14	852	71.9	193	1 PRL_MUSVI	P29234 mustela vis
15	793	66.9	229	1 PRL_MELGA	P17572 meleagris g
16	790.5	66.9	198	1 PRL_CHEMY	P33090 chelonias my
17	783	66.1	229	1 PRL_CHICK	P14676 gallus galli
18	777	65.6	199	1 PRL_ALIMI	P55752 alligator m
19	776	65.5	199	1 PRL_CRONO	P55754 crocodylus
20	772	65.1	199	1 PRL_ALIMI	P55751 alligator m
21	771	65.1	199	1 PRL_CRONO	P55753 crocodylus
22	737	62.2	199	1 PRL_LOXAF	P10765 loxodonta a
23	729.5	61.6	226	1 PRL_RAT	P01237 rattus norv
24	724.5	61.1	226	1 PRL_MESAU	P37884 mesocricetu
25	705.5	59.5	226	1 PRL_MOUSE	P06879 mus musculu
26	609.5	51.4	200	1 PRL_PROAT	P33091 protopertus
27	523	44.1	236	1 PRL_BOVIN	P09611 bos taurus
28	494	41.7	221	1 PRL_BURJA	P43001 bufo japoni
29	494	41.7	221	1 PRL2_MESAU	P14059 mesocricetu
30	486.5	41.1	236	1 PRL_SHEEP	P16038 ovis aries
31	472.5	39.9	238	1 PRL2_BOVIN	P19159 bos taurus
32	462	39.0	222	1 PRL2_MOUSE	P09586 mus musculu
33	439	37.0	267	1 PRL2_BOVIN	P12401 bos taurus

34	436	36.8	221	1 PRL2_RAT	P09321 rattus norv
35	429.5	36.2	238	1 PRL1_BOVIN	P05402 bos taurus
36	416	35.1	234	1 PRR1_RAT	P24800 rattus norv
37	413.5	34.9	239	1 PRR4_BOVIN	P18917 bos taurus
38	410.5	34.6	224	1 PRL1_MOUSE	P18918 mus musculu
39	410.5	34.6	244	1 PLFR_MOUSE	P04769 mus musculu
40	400	33.8	223	1 PRLV_RAT	P34207 rattus norv
41	376	31.7	213	1 PRR3_BOVIN	P12402 bos taurus
42	371	31.3	230	1 PRL1_RAT	P21702 rattus norv
43	356	30.0	224	1 PLE1_MOUSE	P04095 mus musculu
44	355	30.0	224	1 PLF3_MOUSE	P18918 mus musculu
45	349.5	29.5	227	1 PRR1_RAT	P09320 rattus norv

## ALIGNMENTS

```

RESULT 1
PRL_HUMAN          STANDARD:      PRT:      227 AA.
ID PRL_HUMAN
AC P01236: 015199; Q92996;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE PROLACTIN PRECURSOR (PRL).
GN PRL.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
OX NCB1-Taxid-9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-84182507; PubMed-6325171;
RA Truong A.T., Duez C., Belayew A., Renard A., Pictet R.L., Bell G.I.,
RA Martial J.A.;
RT "Isolation and characterization of the human prolactin gene.";
RL EMBO J. 3:429-437(1984).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE-81168179; PubMed-6260780;
RA Cooke N.E., Colt D., Shine J., Baxter J.D., Martial J.A.;
RT "Human prolactin. cDNA structural analysis and evolutionary
RL J. Biol. Chem. 256:4007-4016(1981).
RN [3]
RP SEQUENCE FROM N.A.
RX PubMed-2050267;
RA Hiraoka Y., Tatsumi K., Shiozawa M., Also S., Fukasawa T., Yasuda K.,
RA Miyai K.;
RT "A placenta-specific 5'-non-coding exon of human prolactin.";
RL Mol. Cell. Endocrinol. 75:71-80(1990).
RN [4]
RP SEQUENCE OF 11-227 FROM N.A.
RX MEDLINE-84264464; PubMed-6146607;
RA Takahashi H., Nabeshima Y., Nabeshima Y., Ogata K., Takeuchi S.;
RT "Molecular cloning and nucleotide sequence of DNA complementary to
RL J. Biochem. 95:1491-1499(1984).
RN [5]
RP SEQUENCE OF 11-201 FROM N.A.
RX TISSUE-Breast;
RC MEDLINE-97411082; PubMed-9266104;
RA Shaw-Bruha C.M., Pirruello S.J., Shull J.D.;
RT "Expression of the prolactin gene in normal and neoplastic human
RL breast tissues and human mammary cell lines: promoter usage and
alternative mRNA splicing.";
RL Breast Cancer Res. Treat. 44:243-253(1997).
RN [6]
RP SEQUENCE OF 29-227.
RX MEDLINE-78046207; PubMed-925136;
RA Shome B., Parlow A.F.;
RT "Human pituitary prolactin (hPRL): the entire linear amino acid
sequence.";
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RL J. Clin. Endocrinol. Metab. 45:1112-1115(1977).
RN [7]
RP SEQUENCE OF 29-53.
RX MEDLINE=75151509; PubMed=1126929;
RA Jacobs J.W., Niall H.D.;
RT "High sensitivity automated sequence determination of polypeptides.";
RL J. Biol. Chem. 250:3629-3636(1975).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -1- CAUTION: REF.3 SEQUENCE DIFFERS FROM THAT SHOWN DUE TO A
CC FRAMESHIFT IN POSITION 8.
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CC -----
DR EMBL: X00540; CAA25214.1; -
DR EMBL: X00541; CAA25214.1; JOINED.
DR EMBL: X00543; CAA25214.1; JOINED.
DR EMBL: X00544; CAA25214.1; JOINED.
DR EMBL: V00566; CAA23829.1; -
DR EMBL: M29386; AAA60173.1; -
DR EMBL: D00411; BAA00312.1; -
DR EMBL: X54393; CAA38263.1; ALT_FRAME.
DR EMBL: X54393; CAA38264.1; ALT_FRAME.
DR EMBL: U75583; AAB70858.1; -
DR PIR: A80998; LCHU.
DR HSSP: Q28632; IAN3.
DR MIM: 176760; -
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.
FT SIGNAL 1 28
FT CHAIN 29 227 PROLACTIN.
FT DISULFID 32 39 BY SIMILARITY.
FT DISULFID 86 202 BY SIMILARITY.
FT DISULFID 219 227 BY SIMILARITY.
FT CARBOHD 59 59 N-LINKED (GLCNAC. . .) (PARTIAL).
FT CONFLICT 42 42 T -> A (IN REF. 5).
FT CONFLICT 110 111 SL -> VS (IN REF. 6).
FT CONFLICT 113 114 S -> P (IN REF. 6).
FT CONFLICT 118 118 E -> Q (IN REF. 5).
FT CONFLICT 148 148 N -> D (IN REF. 4).
FT CONFLICT 172 172 N -> D (IN REF. 6).
FT CONFLICT 190 191 ES -> SE (IN REF. 6).
FT CONFLICT 206 206 D -> H (IN REF. 4).
FT CONFLICT 206 206 D -> H (IN REF. 4).
SO SEQUENCE 227 AA; 25876 MW; 952BBA1B6A955527 CRC64;

Query Match 100.0%; Score 1185; DB 1; Length 227;
Best Local Similarity 100.0%; Pred. No. 2,3e-90;
Matches 227; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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QY 181 LPSIQMADESRLSAYNLLHCLRDSDHKIDNVLKLLKRIHNNC 227
DB 181 LPSIQMADESRLSAYNLLHCLRDSDHKIDNVLKLLKRIHNNC 227

RESULT 2
PRL_MACMU
ID PRL_MACMU STANDARD: PRT; 227 AA.
AC P5151;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DE 01-OCT-1996 (Rel. 34, Last annotation update)
DE PROLACTIN PRECURSOR (PRL).
GN PRL.
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecoidea; Macaca.
OX NCBI_Taxid=9544;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Decidua;
RX MEDLINE=9420570; PubMed=8167226;
RA Brown N.A., Bethea C.L.;
RT "Cloning of decidual prolactin from rhesus macaque.";
RL Biol. Reprod. 50:543-552(1994).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL: U09018; AAA18471.1; -
DR HSSP: Q28632; IAN3.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.
FT SIGNAL 1 28
FT CHAIN 29 227 PROLACTIN.
FT DISULFID 32 39 BY SIMILARITY.
FT DISULFID 86 202 BY SIMILARITY.
FT DISULFID 219 227 BY SIMILARITY.
FT CARBOHD 59 59 N-LINKED (GLCNAC. . .) (POTENTIAL).
SO SEQUENCE 227 AA; 25972 MW; 1B6B25E087C401E4 CRC64;

Query Match 98.6%; Score 1168; DB 1; Length 227;
Best Local Similarity 97.8%; Pred. No. 5,8e-89;
Matches 222; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

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Oy	181	LPSLOWADEESRLSAYVNLHCLRRDSKRDINYLKLRCRIIHNNC	227
DB	181	LPSLOWADEESRLSAYVNLHCLRRDSKRDINYLKLRCRIIHNNC	227
RESULT	3		
PRL_PIG		STANDARD:	PRT;    229 AA.
ID AC	P01238:		
DT	21-JUL-1986 (Rel. 01, Created)		
DT	01-OCT-1994 (Rel. 30, Last sequence update)		
DT	01-FEB-1996 (Rel. 33, Last annotation update)		
DE	PROLACTIN PRECURSOR (PRL).		
GN	PRL.		
OS	Sus scrofa (pig).		
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;		
OC	Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.		
OX	NCBI_TaxID=9823;		
RN	[1]		
RP	SEQUENCE FROM N.A.		
RX	MEDLINE=89263739; PubMed=2726463;		
RA	Schulz Aellen M.F., Schmid E., Movva R.N.;		
RT	"Nucleotide sequence of porcine prolactin cDNA.";		
RL	Nucleic Acids Res. 17:3295-3295(1989). [2]		
RN	[2]		
RP	SEQUENCE FROM N.A.		
RX	MEDLINE=90262633; PubMed=2344390;		
RA	Kato Y., Hirai T., Kato T.;		
RT	"Molecular cloning of cDNA for porcine prolactin precursor.";		
RL	J. Mol. Endocrinol. 4:135-142(1990). [3]		
RN	[3]		
RP	SEQUENCE OF 31-229.		
RX	MEDLINE=76189476; Pubmed=1270193;		
RA	Ll C.H.;		
RT	"Studies on pituitary lactogenic hormone. The primary structure of the porcine hormone.";		
RL	Int. J. Pept. Protein Res. 8:205-224(1976).		
CC	-I- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY PROMOTING LACTATION.		
CC	-I- SUBCELLULAR LOCATION: SECRETED.		
CC	-I- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.		
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CC	-----		
DR	EMBL; X14068; CAA32231.1; .		
DR	PIR; A01507; ICPG.		
DR	PIR; S04077; S04077.		
DR	PIR; A60971; A60971.		
DR	HSSP; Q28632; IAN3.		
DR	InterPro: IPRO01400; SOMATOTROPIN.		
DR	Pfam: PF00103; hormone: 1.		
DR	PRINTS: PR00836; SOMATOTROPIN.		
DR	PROSITE; PS00266; SOMATOTROPIN_1; 1.		
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.		
KW	Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.		
FT	SIGNAL	1	30
FT	CHAIN	31	229
FT	DISULFID	34	41
FT	DISULFID	88	204
FT	DISULFID	221	229
FT	CARBOHYD	61	61
FT	CONFLICT	4	4
FT	CONFLICT	43	43
FT	CONFLICT	152	152
FT	CONFLICT	226	226
FT	CONFLICT	226	226
SEQ	SEQUENCE	229 AA; 26141 MW; 908507EEBDA33B47 CRC64;	

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Query Match similarity      79.9%; Score 959; DB 1; Length 229;
Best Local Similarity     79.5%; Pred. No. 8-2e-72;
Matches 182; Conservative 24; Mismatches 21; Indels 2; Gaps 1;

OY      1 MNIGKSPWKG--LLLLVSNLLCQSVAPPLICPGGARCQVTLRDFRAVLSHYIH 58
          : : | | | | | | | | | | | | | | | | | | | | | | | | | | | |
DB       1 MNRGSSOKGSLLLLLLLVSNNFLCKSVASLPICSGAVNCSLRDLFDRAVILSHYIH 60
OY      59 NUSSEMFSEFDRKYTHRGGFITKAINSCHTSSLATPEDEKAQQMNOQDEFSLVSIIRS 118
          : : | | | | | | | | | | | | | | | | | | | | | | | | | | | |
DB       61 NUSSEMFNEFDRKYAQGRFITKAINSCHTSSLTPEDKEAQAQIHHVEVLNLIRLVRS 120
OY      119 WNEPPLYHLYTEVRGQOEAPALTSKAVEIEBDOTKRLGEMELIVSQVPETKENIYPWM 178
          : : | | | | | | | | | | | | | | | | | | | | | | | | | | | |
DB       121 WNDPLXHLVTEVRGQOEAPDALISRAITEEDGNKKLLEGMETIVQVHPGIRENEYISVM 180
OY      179 SGLPSIQMADESRLSAYYNLLHCRLRDSHKIDNYLKLLKCRIHHNNNC 227
          : : | | | | | | | | | | | | | | | | | | | | | | | | | | | |
DB       181 SGLPSIQMADEDTRLFAPFNLLHCRIRDSSHKIDNYLKLLKCRIIYDSDNC 229

RESULT 4
PRL_RABIT STANDARD: PRT: 227 AA.
ID_PRL_RABIT AC 028632:
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 15-JUL-1998 (Rel. 36, Last annotation update)
DE PROLACTIN PRECURSOR (PRL).
GN PRL.
OS Oryctolagus cuniculus (Rabbit).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX NCBI_TaxID=9986;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-NEW ZEALAND WHITE;
RX MEDLINE=966280118; PubMed=8672230;
RA Gabou L., Bolsard M., Gourdou I., Jammes M., Dulor J.P., Djiane J.;
RT "Cloning of rabbit prolactin cDNA and prolactin gene expression in
   the rabbit mammary gland."
RL J. Mol. Endocrinol. 16:27-37(1996).
[2]
RN [1]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=97248733; PubMed=9094747;
RA Halaby D., Thoreau E., Djiane J., Morron J.P.;
RT "Homology modeling of rabbit prolactin hormone complexed with its
   receptor."
RL Proteins 27:459-468(1997).
CC -! FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
   PROMOTING LACTATION.
CC -! SUBCELLULAR LOCATION: SECRETED.
CC -! SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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DR EMBL: U27199; AAB17481.1; -.
DR PDB: 1AN3; 03-DEC-97.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00836; SOMATOTROPIN.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Parturition; Lactation; Pituitary; Signal; 3D-structure.
FT SIGNAL 1 28 BY SIMILARITY.
FT CHAIN 29 227 PROLACTIN.
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FT DISULFID 32 39 BY SIMILARITY.  
 FT DISULFID 86 202 BY SIMILARITY.  
 FT DISULFID 219 227 BY SIMILARITY.  
 SQ SEQUENCE 227 AA: 25990 MW: 7487570F4E7DB048 CRC64:

Query Match 80.3%; Score 952; DB 1; Length 227;  
 Best Local Similarity 78.9%; Pred. No. 3.1e-71;  
 Matches 179; Conservative 25; Mismatches 23; Indels 0; Gaps 0;

QY 1 MNKSGPMWGSLLLVSNLLCSVAPLPICPGGACRCQVTLRDLFDRAVLSHYTH 60  
 1 MDKMSRRKSGLLLVSNLLCSVAPLPICPGGACRCQVTLRDLFDRAVLSHYTH 60  
 QY 61 SSEMFSEFDRKRYTHGRCFTTKAINSCHTSSLATPEDEKQAQOQIHEDLNLVLRVLS 120  
 61 SSEMFSEFDRKRYTHGRCFTTKAINSCHTSSLATPEDEKQAQOQIHEDLNLVLRVLS 120  
 Db 61 SSEMFSEFDRKRYTHGRCFTTKAINSCHTSSLATPEDEKQAQOQIHEDLNLVLRVLS 120  
 QY 121 EPLVHLVTEVRGQAEAPALSKAVEIEBOTKRLLEGMLIVSOVHPETKENEIYPVWSG 180  
 121 EPLVHLVTEVRGQAEAPALSKAVEIEBOTKRLLEGMLIVSOVHPETKENEIYPVWSG 180  
 Db 121 DPLVHLVTEVRGQAEAPALSKAVEIEBOTKRLLEGMLIVSOVHPETKENEIYPVWSG 180  
 QY 181 LPSLQMADEDSRLSAVYNLLHCLRDHSKIDNYLKLKCRITIHNNC 227  
 181 LPSLQMADEDSRLSAVYNLLHCLRDHSKIDNYLKLKCRITIHNNC 227  
 Db 181 LPSLQMADEDSRLSAVYNLLHCLRDHSKIDNYLKLKCRITIHNNC 227

## RESULT 5

PRL\_FELCA STANDARD; PRT: 229 AA.  
 ID PRL\_FELCA  
 AC P46403;  
 DT 01-NOV-1995 (Rel. 32, Created)  
 DT 01-NOV-1995 (Rel. 32, Last sequence update)  
 DT 15-JUL-1999 (Rel. 38, Last annotation update)  
 DE PROLACTIN PRECURSOR (PRL).  
 GN PRL.  
 OS Felis silvestris catus (Cat).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.  
 OX NCBI\_Taxid=9685;  
 RN 11  
 RP SEQUENCE FROM N.A.  
 RX TISSUE=Pituitary;  
 RA MEDLINE=96194906; PubMed=8654953;  
 RT Warren W.C., Bentle K.A., Bogosian G.;  
 RL "Cloning of the CDNA coding for cat growth hormone and prolactin."; Gene 168:247-249(1996).  
 CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY PROMOTING LACTATION.  
 CC -1- SUBCELLULAR LOCATION: SECRETED.  
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.  
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 CC EMBL: U25974; AAA67295.1; -  
 DR HSSP: Q28632; IAN3.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone.1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.  
 FT CHAIN 1 30 BY SIMILARITY.  
 FT DISULFID 31 229 PROLACTIN.  
 FT DISULFID 34 41 BY SIMILARITY.  
 FT DISULFID 88 204 BY SIMILARITY.  
 FT DISULFID 221 229 BY SIMILARITY.

FT CARBOHYD 61 61 N-LINKED (GLCNAC. . .) (POTENTIAL).  
 SQ SEQUENCE 229 AA: 26282 MW: 657347282D11E61A CRC64:

Query Match 79.2%; Score 938; DB 1; Length 229;  
 Best Local Similarity 76.9%; Pred. No. 4.3e-70;  
 Matches 176; Conservative 29; Mismatches 22; Indels 2; Gaps 1;

QY 1 MNKSGPMWGSLLLVSNLLCSVAPLPICPGGACRCQVTLRDLFDRAVLSHYTH 58  
 1 MDKMSRRKSGLLLVSNLLCSVAPLPICPGGACRCQVTLRDLFDRAVLSHYTH 60  
 QY 59 NLSSEMFSEFDRKRYTHGRCFTTKAINSCHTSSLATPEDEKQAQOQIHEDLNLVLRVLS 118  
 61 NLSSEMFSEFDRKRYTHGRCFTTKAINSCHTSSLATPEDEKQAQOQIHEDLNLVLRVLS 120  
 Db 61 NLSSEMFSEFDRKRYTHGRCFTTKAINSCHTSSLATPEDEKQAQOQIHEDLNLVLRVLS 120  
 QY 119 WNEPLVHLVTEVRGQAEAPALSKAVEIEBOTKRLLEGMLIVSOVHPETKENEIYPVWSG 178  
 121 WNEPLVHLVTEVRGQAEAPALSKAVEIEBOTKRLLEGMLIVSOVHPETKENEIYPVWSG 180  
 Db 121 WNEPLVHLVTEVRGQAEAPALSKAVEIEBOTKRLLEGMLIVSOVHPETKENEIYPVWSG 180  
 QY 179 SGLPSLQMADEDSRLSAVYNLLHCLRDHSKIDNYLKLKCRITIHNNC 227  
 181 SGLPSLQMADEDSRLSAVYNLLHCLRDHSKIDNYLKLKCRITIHNNC 229  
 Db 181 SGLPSLQMADEDSRLSAVYNLLHCLRDHSKIDNYLKLKCRITIHNNC 229

## RESULT 6

PRL\_TRIYU STANDARD; PRT: 228 AA.  
 ID PRL\_TRIYU  
 AC O62781;  
 DT 15-DEC-1998 (Rel. 37, Created)  
 DT 15-DEC-1998 (Rel. 37, Last sequence update)  
 DT 15-DEC-1998 (Rel. 37, Last annotation update)  
 DE PROLACTIN PRECURSOR (PRL).  
 GN PRL.  
 OS Trichosurus vulpecula (Brush-tailed possum).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Metatheria; Diprotodontia; Phalangeridae; Trichosurus.  
 OX NCBI\_Taxid=9337;  
 RN 11  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=96325477; PubMed=9653022;  
 RA Curlew J.D., Saunders M.C., Kuang J., Harrison G.A., Cooper D.W.;  
 RT "Cloning and sequence analysis of a pituitary prolactin cDNA from the brush-tailed possum (Trichosurus vulpecula).";  
 RL Gen. Comp. Endocrinol. 111:61-67(1998).  
 CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY PROMOTING LACTATION, MAMMOGENESIS, MITOGENESIS AND OSMOREGULATION.  
 CC -1- SUBCELLULAR LOCATION: SECRETED.  
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.  
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 CC EMBL: AF054634; AAC12736.1; -  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone.1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.  
 FT CHAIN 1 29 BY SIMILARITY.  
 FT DISULFID 30 228 PROLACTIN.  
 FT DISULFID 33 40 BY SIMILARITY.  
 FT DISULFID 87 203 BY SIMILARITY.  
 FT DISULFID 220 228 BY SIMILARITY.  
 SQ SEQUENCE 228 AA: 26097 MW: 25261EBB165B81A6 CRC64:





Db 181 KIDNYTLKLCRIIYDSC 199

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RESULT 9
PRL_CAPHI
ID PRL_CAPHI STANDARD: PRT: 229 AA.
AC Q28318; Q28329;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE PROLACTIN PRECURSOR (PRL).
GN PRL.
OS Capra hircus (Goat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Capra.
OX NCBI_TaxID=9925;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=95059806; PubMed=7969789;
RA Le Provost F., Leroux C., Martin P., Gaye P., Djiane J.;
RT "Prolactin gene expression in ovine and caprine mammary gland.";
RL Neuroendocrinology 60:305-313(1994).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC CC
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CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@sib-sib.ch).
CC
CC EMBL: X76049; CA53634.1; -
CC EMBL: X76048; CA53633.1; -
CC HSSP: Q28632; 1AN3.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Parturition; lactation; pituitary; Signal.
FT SIGNAL 1 30
FT CHAIN 1 229 BY SIMILARITY.
FT DISULFID 34 41 BY SIMILARITY.
FT DISULFID 88 204 BY SIMILARITY.
FT DISULFID 221 229 BY SIMILARITY.
FT VARIANT 164 164 L->F
SQ SEQUENCE 229 AA; 25773 MW; 331C640C66134D0A CRC64;

Query Match 74.0%; Score 877; DB 1; Length 229;
Best Local Similarity 72.5%; Pred. No. 4,4e-65;
Matches 166; Conservative 26; Mismatches 35; Indels 2; Gaps 1;

1 MNIGSPKKS--LLLLVSNLLLCOSVAPLPICPGACRCQVTLRDLFRAVYLSHYIH 58
1 MDSKGSQKSGRLLLLLVSNLLLCQGVSTPCVPGNGCQVSLRDLFRAVYLSHYIH 60
59 NLSEMESEFPDKRYTHGRGFTTKAINSCHTSSLATPEDKDAQOMOKDFLSLVSLRS 118
61 NLSEMESEFPDKRYTHGRGFTTKAINSCHTSSLATPEDKDAQOMOKDFLSLVSLRS 120
119 WNEPLHLVTEVVRGMOEAPALISKAVEIEQTKRLLEGHELIYSQVHPETKENEIYPVW 178
121 WNDPLHLVTEVVRGMOEAPALISKAVEIEQTKRLLEGHEMIIGQVTPAKETEPPIPVW 180
179 SGLPSIQTKDEARHSAPFYNLHLCRLRDSKIDNYTLKLCRIIHNNC 227

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Db 181 SGLPSIQTKDEARHSAPFYNLHLCRLRDSKIDNYTLKLCRIIHNNC 229

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RESULT 10
PRL_HORSE
ID PRL_HORSE STANDARD: PRT: 199 AA.
AC P12420;
DT 01-OCT-1989 (Rel. 12, Created)
DT 01-OCT-1989 (Rel. 12, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE PROLACTIN (PRL).
GN PRL.
OS Equus caballus (Horse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
OX NCBI_TaxID=9796;
RN [1]
RP SEQUENCE.
RX MEDLINE=88314465; PubMed=3045032;
RA Lehman S.R., Labm H.W., Miedel M.C., Hulmes J.D., Li C.H.;
RT "Primary structure of equine pituitary prolactin.";
RL Int. J. Pept. Protein Res. 31:544-554(1988).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC DR
CC HSSP: Q28632; 1AN3.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Parturition; lactation; pituitary; Glycoprotein.
FT DISULFID 4 11
FT DISULFID 58 174 BY SIMILARITY.
FT DISULFID 191 199 BY SIMILARITY.
FT CARBOHYD 31 31 N-LINKED (GLCNAG. . .) (PARTIAL).
SQ SEQUENCE 199 AA; 23001 MW; 119AE5B6278019E CRC64;

Query Match 73.9%; Score 876; DB 1; Length 199;
Best Local Similarity 79.9%; Pred. No. 4,4e-65;
Matches 159; Conservative 24; Mismatches 16; Indels 0; Gaps 0;

29 LPICPGACRCQVTLRDLFRAVYLSHYIHNLSEMESEFPDKRYTHGRGFTTKAINSCHT 88
1 LPICPGACRCQVTLRDLFRAVYLSHYIHNLSEMESEFPDKRYTHGRGFTTKAINSCHT 60
89 SSLATPEDKDAQOMOKDFLSLVSLRSWNEPLHLVTEVVRGMOEAPALISKAVEIE 148
61 SSLSTPEDKDAQOQIHEDDLNLILRVLKSNDPLHLVTEVVRGMOEAPALISKAVEIE 120
149 EOTKRLLEGHELIYSQVHPETKENEIYPVWSGLPSIQMADEESRLSAYNLLHCLRDSH 208
121 EONRRLLEGHEMIIGQVTPAKETEPPIPVW 180
209 KIDNYTLKLCRIIHNNC 227
181 KIDNYTLKLCRIIYDSC 199

RESULT 11
PRL_BOVIN
ID PRL_BOVIN STANDARD: PRT: 229 AA.
AC P01239; Q29417;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE PROLACTIN PRECURSOR (PRL).
GN PRL.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

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CC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
 CC Bovidae; Bovinae; Bos.  
 CC NCBI\_TaxID=9913;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=82098114; PubMed=6274859;  
 RA Sasavaga N.L., Nilson J.H., Horowitz S., Rottman F.M.;  
 RT "Nucleotide sequence of bovine prolactin messenger RNA. Evidence for  
 sequence polymorphism";  
 RL J. Biol. Chem. 257:678-681(1982).  
 RN [2]  
 RP SEQUENCE OF 21-229 FROM N.A.  
 RX MEDLINE=83157107; PubMed=6299665;  
 RA Miller W.L., Coit D., Baxter J.D., Martial J.A.;  
 RT "Cloning of bovine prolactin cDNA and evolutionary implications of  
 its sequence";  
 RL DNA 1:37-50(1981).  
 RN [3]  
 RP REVISIONS.  
 RX MEDLINE=83182016; PubMed=6897772;  
 RA Miller W.L., Coit D., Baxter J.D., Martial J.A.;  
 RT "Bovine prolactin: corrected cDNA sequence and genetic  
 polymorphisms";  
 RL DNA 1:313-314(1982).  
 RN [4]  
 RP SEQUENCE OF 96-229 FROM N.A.  
 RA Rubtsov P.M., Oganesyan R.G., Gorbulev V.G., Skryabin K.G., Baev A.A.;  
 RT "Genetic engineering of peptide hormones. II. Possible polymorphism of  
 prolactin in cattle. Data of molecular cloning";  
 RL Mol. Biol. (Mosk) 22:117-127(1988).  
 RN [5]  
 RP PRELIMINARY SEQUENCE OF 31-229.  
 RX MEDLINE=75031394; PubMed=4608931;  
 RA Wallis M.;  
 RT "The primary structure of bovine prolactin.";  
 RL FEBS Lett. 44:205-208(1974).  
 RN [6]  
 RP SEQUENCE OF 31-46.  
 RX MEDLINE=71150631; PubMed=5507606;  
 RA Graf L., Cseh G., Nagy I., Kurcz M.;  
 RT "An evidence for dimerization of prolactin monomer";  
 RL Acta Biochim. Biophys. Acad. Sci. Hung. 5:299-303(1970).  
 RN [7]  
 RP PHOSPHORYLATION SITES.  
 RC TISSUE-Pituitary;  
 RX MEDLINE=94071839; PubMed=8250856;  
 RA Kim B.G., Brooks C.L.;  
 RT "Isolation and characterization of phosphorylated bovine prolactin.";  
 RL Biochem. J. 296:41-47(1993).  
 CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY  
 PROMOTING LACTATION.  
 CC -1- SUBCELLULAR LOCATION: SECRETED.  
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.  
 CC -----  
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 or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 CC -----  
 DR EMBL: V00112; CAA23446.1; -;  
 DR EMBL: X01452; CAB57794.1; -;  
 DR EMBL: X01744; CAA25880.1; -;  
 DR EMBL: M36873; AAA30737.1; -;  
 DR EMBL: M36874; AAA30738.1; -;  
 DR EMBL: X14320; CAA32500.1; -;  
 DR EMBL: X14321; CAA32501.1; -;  
 DR PIR: A01508; LCBO.  
 DR HSSP: Q28632; IAN3.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.

DR PRINTS: PR0836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Parturition; Lactation; Pituitary; Signal; Phosphorylation.  
 FT SIGNAL 1 30  
 FT CHAIN 31 229 PROLACTIN.  
 FT DISULFID 34 41  
 FT DISULFID 88 204  
 FT DISULFID 221 229  
 FT MOD\_RES 56 56 PHOSPHORYLATION.  
 FT MOD\_RES 64 64 PHOSPHORYLATION.  
 FT MOD\_RES 120 120 PHOSPHORYLATION.  
 FT CONFLICT 61 61 D -> N (IN REF. 5).  
 SO SEQUENCE 229 AA; 25792 MM; E7E9BB655A26F3D CRC64;  
 Query Match 73.9%; Score 876; DB 1; Length 229;  
 Best Local Similarity 72.5%; Pred. No. 5.3e-65;  
 Matches 166; Conservative 26; Mismatches 35; Indels 2; Gaps 1;  
 QY 1 MNKSPWKGK--LDLLVSNLLCQSYAPLPICGGAARCOVTRLDLFDRAVLSHYIH 58  
 DB 1 MDSKSSQKGRLLLLVSNLLCQGYSTPVCNGPNCQVSLRDLFDRAVMSHYIH 60  
 QY 59 NLSSEMFSEFDKRYTHGCFITKAINSCHTSSLATPEDEKQAQNMNQDFLSVILRS 118  
 DB 61 DLSSEMFNEFDKRYAQGKGFITMAINSCHTSSLPPEDEKQAQOQTHHEVLSLGLLRS 120  
 QY 119 WNEPLYHYTEVRGMEAPALTSKAVEIEBOTKRLGSMELVSOVPHETKENETYPW 178  
 DB 121 WNDPLYHYTEVRGMEAPALTSKAVEIEBOTKRLGSMELVSOVPHETKENETYPW 180  
 QY 179 SGLPSIQMADEESRLSAYVYNLHCLRDSSHKIDNYLKLKRIIHNNC 227  
 DB 181 SGLPSIQTRDEEDARYSAFYNLHCLRDSSKIDTYLKLKNCIIYNNC 229  
 RESULT 12  
 PRL\_SHEEP  
 ID PRL\_SHEEP STANDARD; PRT; 229 AA.  
 AC P01240; Q28587;  
 DT 21-JUL-1986 (Rel. 01, Created)  
 DT 01-MAR-1989 (Rel. 10, Last sequence update)  
 DT 01-NOV-1997 (Rel. 35, Last annotation update)  
 DE PROLACTIN PRECURSOR (PRL).  
 GN PRL.  
 OS Ovis aries (Sheep).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 CC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
 CC Bovidae; Caprinae; Ovis.  
 CC NCBI\_TaxID=9940;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE-Pituitary;  
 RX MEDLINE=89098399; PubMed=2911473;  
 RA Adams T.E., Baker L., Brandon M.R.;  
 RT "Cloning and nucleotide sequence of an ovine prolactin cDNA";  
 RL Nucleic Acids Res. 17:440-440(1989).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE-Pituitary;  
 RX MEDLINE=89326152; PubMed=2666265;  
 RA Varma S., Kwok S., Ebner K.E.;  
 RT "Cloning and nucleotide sequence of ovine prolactin cDNA";  
 RL Gene 77:349-359(1989).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=95059806; PubMed=7969789;  
 RA le Provost F., Leroux C., Martin P., Gaye P., Djiane J.;  
 RT "Prolactin gene expression in ovine and caprine mammary gland";  
 RL Neuroendocrinology 60:305-313(1994).  
 RN [4]  
 RP SEQUENCE OF 31-229.

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RX MEDLINE-71091978; PubMed-5497153;
RA L.I.C.H., Dixon J.S., Lo T.-B., Schmidt K.D., Pankov Y.A.;
RT "Studies on pituitary lactogenic hormone. xxx. The primary structure
RT of the sheep hormone."
RN Arch. Biochem. Biophys. 141:705-737(1970).
RN [51]
RP REVISIONS.
RX MEDLINE-76189476; PubMed-1270193;
RA L.I.C.H.;
RT "Studies on pituitary lactogenic hormone. The primary structure of
RT the porcine hormone."
RN Int. J. Pept. Protein Res. 8:205-224(1976).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION, MAMMOGENESIS, MITOGENESIS AND OSMOREGULATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC or send an email to license@sdb-sdb.ch).
CC -----
DR EMBL: X13483; CA31839.1;
DR EMBL: M27057; AA31578.1; ALT_INIT.
DR EMBL: X76050; CA53635.1;
DR PIR: A01509; LCSI.
DR PIR: S02104; S02104.
DR PIR: J50200; J50200.
DR HSSP: Q28632; 1AN3.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
DR Hormone: Parturition; Lactation; Pituitary; Signal; Glycoprotein.
FT SIGNAL 1 30
FT CHAIN 31 229 PROLACTIN.
FT DISULFID 34 41
FT DISULFID 88 204
FT DISULFID 221 229
FT CARBOHYD 61 61
FT CONFLICT 40 40 N-LINKED (GLCNAC. . .) (PARTIAL).
SQ SEQUENCE 229 AA; 25777 MW; 97ED8AF2991B9B39 CRC64;

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Query Match 73.8%; Score 875; DB 1; Length 229;  
 Best Local Similarity 72.5%; Pred. No. 6.4e-65;  
 Matches 166; Conservative 25; Mismatches 36; Indels 2; Gaps 1;

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QY 1 MNIGSPKGS--LLLLVSNLLCQSYAPLPICPGGAARCOVTLRDLFRAVYLSHYIH 58
DB 1 MDSKGSACKGSRLLLLVSNLLCQGVSTPVCNPGNGCQVSLRDLFRAVYLSHYIH 60
QY 59 NLSEMEFEPFKRYTHGRTTKAINSCHTSLATPEDKEQAQOMKDFLSLVLSLRS 118
DB 61 NLSEMEFEPKRYAOGKFTTALNSCHTSLSLTPEDKEQAQOTHEEVLMSLLGLRS 120
QY 119 WNEPLVLYTEVRCMOEPAEALISKAIEIEQTKRLLEGKMLISQVHPETKENEIYPVW 178
DB 121 WNDPLVLYTEVRCMKGVPAALISRAIEIEENKRLLEGKEMIFGQVTPGAKETEPYVW 180
QY 179 SGLPSLOMADEESRLSAYVNLHCLRDSSHIDNYLKLRCRIIHNNC 227
DB 181 SGLPSLOTKEDARHSAYVNLHCLRDSSKIDYTLKLCRIIYNNC 229

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RESULT 13  
 PRL\_BALBO  
 ID PRL\_BALBO STANDARD; PRT; 199 AA.  
 AC P33089;

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DT 01-OCT-1993 (Rel. 27, Created)
DT 01-OCT-1993 (Rel. 27, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE PROLACTIN (PRL).
GN PRL.
OS Balaenoptera borealis (Sei whale).
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;
OC Balaenopteridae; Balaenoptera.
OX NCBI_Taxid=9768;
RN [1]
RP SEQUENCE.
RX MEDLINE-86026530; PubMed-4052510;
RA Karaseva L.I.; Pankov Y.A.;
RT "Primary structure of whale prolactin."
RT Biochimica 50:1528-1534(1985)
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC PIR: P0128; P0128.
DR HSSP: Q28632; 1AN3.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
DR Hormone: Parturition; Lactation; Pituitary.
FT DISULFID 4 11
FT DISULFID 58 174 BY SIMILARITY.
FT DISULFID 191 199 BY SIMILARITY.
SQ SEQUENCE 199 AA; 22812 MW; CZD18826963A45D6 CRC64;

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Query Match 72.7%; Score 861; DB 1; Length 199;  
 Best Local Similarity 78.9%; Pred. No. 7.6e-64;  
 Matches 157; Conservative 25; Mismatches 17; Indels 0; Gaps 0;

```

QY 29 LPICPGGAARCOVTLRDLFRAVYLSHYIHNLSSEMFSEDFKRYTHGRTTKAINSCHT 88
DB 1 LPICPGAVNCOVSLRDLFRAVYLSHYIHNLSSEMFSEDFKRYAOGKFTTKAIDSCHT 60
QY 89 SSLATPEDKEQAQOMKDFLSLVLSIRSNPEPLVLYTEVRCMOEPAEALISKAIEIE 148
DB 61 SSLATPEDKEQAQOIHHEVLSLVLSIRSNPEPLVLYTEVRCMOEPAEALISKAIEIE 120
QY 149 EOTKRLLEGKMLISQVHPETKENEIYPVWSGLPSLOMADEESRLSAYVNLHCLRDSSH 208
DB 121 EENKRLLEGKMLISQVHPETKENEIYPVWSGLPSLOMADEESRLSAYVNLHCLRDSSH 180
QY 209 KIDNYLKLRCRIIHNNC 227
DB 181 KIDNYLKLRCRIIYNNC 199

```

RESULT 14  
 PRL\_MUSVI  
 ID PRL\_MUSVI STANDARD; PRT; 193 AA.  
 AC P29234;  
 DT 01-DEC-1992 (Rel. 24, Created)  
 DT 01-FEB-1995 (Rel. 31, Last sequence update)  
 DT 01-NOV-1997 (Rel. 35, Last annotation update)  
 DE PROLACTIN (PRL) (FRAGMENT).  
 GN PRL.  
 OS Musela vison (American mink).  
 OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Mustelidae; Mustela.  
 OX NCBI\_Taxid=9667;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE-94140110; PubMed-8307350;  
 RA Pereelygina L.M., Baticheva E.M., Sebeleva T.E., Kokoza V.A.;  
 RT "The evolutionarily conserved gene Nc70f, expressed in nerve tissue

```
RT of Drosophila melanogaster, encodes a protein homologous to the mouse
RT delta transcription factor."
RL Genetika 29:1597-1607(1993).
RN [2]
RP SEQUENCE OF 19-193 FROM N.A.
RC TISSUE-Pituitary;
RA Bondar A.A., Golovin S.J., Mertvelsov N.P.;
RL Submitted (NOV-1991) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
CC -!- SUBCELLULAR LOCATION: SECRETED.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC -----
DR EMBL: X59785; CAA42447.1; -
DR EMBL: X63235; CAA44910.1; -
DR PIR: S18882; S18882.
DR HSSP: Q28632; 1AN3.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Parturition; Lactation; Pituitary.
KM NON_TER 1
FT DISULFID 52 168 BY SIMILARITY.
FT DISULFID 185 193 BY SIMILARITY.
FT CONFLICT 40 40 H -> Q (IN REF. 2).
FT CONFLICT 154 154 E -> D (IN REF. 2).
FT CONFLICT 190 190 H -> D (IN REF. 2).
SQ SEQUENCE 193 AA; 22417 MW; 03BD5F6102B9DC30 CRC64;

Query Match 71.9%; Score 852; DB 1; Length 193;
Best Local Similarity 79.8%; Pred. No. 4e-63;
Matches 154; Conservative 26; Mismatches 13; Indels 0; Gaps 0;

OY 35 GAARCOVTLRDLFRAVAVLSHYINHLSEMESEFDRYTHRGFTTKAINSCHTSLATP 94
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
DB 1 GAVNCQVSLRDLFRAVAVLSHYINHLSEMESEFDRYTHRGFTTKAINSCHTSLATP 60

OY 95 EDRBOAQOMNOKDFLSLIVSLRSMNEPLVHLVTEVRGMOCAPEILSKAVEIEQTKRL 154
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
DB 61 EDRBOAQOIHEDDLNLRLVLRSMNDPLVHLYSEVRGMOCAPEILSKAVEIEQTKRL 120

OY 155 LEGMELIYGVHPETKRENEYIPVWSGLPSLOMADEESRLSAVYNNLHCLRDSHKIDNYL 214
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
DB 121 LEGMEKIVGVHPGVRENEYIVWSGLPSLOMAEDSRLLFAFYNNLHCLRDSHKIDNYL 180

OY 215 KLLKCRITIHNNNC 227
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
DB 181 KLLKCRITVYHSNC 193

RESULT 15
PRL_MELGA STANDARD; PRT; 229 AA.
AC P15752;
DT 01-AUG-1990 (Rel. 15, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 13-JUL-1998 (Rel. 36, Last annotation update)
DE PROLACTIN PRECURSOR (PRL).
GN PRL.
OS Melagris gallopavo (Common turkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Archaeoptila; Aves; Neognathae; Galliformes; Meleagrididae; Melagris.
OX NCBI_TaxID=9103;
```

```
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=96206340; PubMed=8618952;
RA Xu M., Proudman J.A., Pitts G.R., Wong E.A., Foster D.N.,
RA el Halawani M.E.;
RT "Vasactive intestinal peptide stimulates prolactin mRNA expression
RT in turkey pituitary cells: effects of dopaminergic drugs.";
RL Proc. Soc. Exp. Biol. Med. 212:52-62(1996).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=91348480; PubMed=1879669;
RA Wong E.A., Ferrin N.H., Silsby J.L., el Halawani M.E.;
RT "Cloning of a turkey prolactin cDNA: expression of prolactin mRNA
RT throughout the reproductive cycle of the domestic turkey (Melagris
RL gallopavo).";
RN [3]
RP SEQUENCE OF 66-229 FROM N.A.
RC TISSUE-Pituitary;
RX MEDLINE=90272435; PubMed=2349117;
RA Karatzas C.N., Zadworny D., Kuhnlein U.;
RT "Nucleotide sequence of turkey prolactin.";
RL Nucleic Acids Res. 18:3071-3071(1990).
CC -!- SUBCELLULAR LOCATION: SECRETED.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC -----
DR EMBL: U05957; AAB60615.1; -
DR EMBL: U05953; AAB60615.1; JOINED.
DR EMBL: U05954; AAB60615.1; JOINED.
DR EMBL: U05955; AAB60615.1; JOINED.
DR EMBL: X51769; CAA36071.1; -
DR PIR: S10170; S10170.
DR HSSP: Q28632; 1AN3.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PROSITE: PS00336; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
KM SIGNAL 1
FT CHAIN 31 229 BY SIMILARITY.
FT DISULFID 34 41 BY SIMILARITY.
FT DISULFID 88 204 BY SIMILARITY.
FT DISULFID 221 229 BY SIMILARITY.
FT CONFLICT 156 156 L -> R (IN REF. 2).
SQ SEQUENCE 229 AA; 25854 MW; DE4530EB2301F2B7 CRC64;

Query Match 66.9%; Score 793; DB 1; Length 229;
Best Local Similarity 65.9%; Pred. No. 3.4e-58;
Matches 151; Conservative 35; Mismatches 41; Indels 2; Gaps 2;

OY 1 MNIKSPWKGSL-LLVSNLLC-QSVAPLPICGAARCOVTLRDLFRAVAVLSHYIH 58
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
DB 1 MSNTGASLKGILLAVLAVLSNMLLTREGVTSLPICSGSVNCQVSLGELFDRVRLSHYIH 60

OY 59 NISSMESEFDRYTHRGCGFTTKAINSCHTSSLATPEKEDQAQOMNOKDFLSLIVSLRS 118
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
DB 61 FLSSIEFNEFDERVYQGGFTTKAVNGCHTSLLTPEDKEQTOQIHBEELNLGLVLR 120

OY 119 WNEPPLYHLYTEVRGMOCAPEILSKAVEIEQTKRLLEGMELIYGVHPETKRENEYIPW 178
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
DB 121 WNDPLIHLASEVQRIKEADPTILMKAVEIEQTKRLLEGMEKIVGRIRHSGAGNEVFSOW 180
```

Fri Apr 26 09:18:14 2002

us-09-815-306-1.rsp

Page 10

**Oy** 179 SGLPSTQMDEERLSAYVLLCLRDSDHKIDNVYLLKLCRIITHNNC 227  
|||||::|||::|:|||||::|:|||||::|:|||||  
**Dd** 181 DGLPSQLDAEDSRLEAFYNLLCLCRDSDHKIDNVYLLKYLCRLIHNNC 229

Search completed: April 25, 2002, 11:07:36  
Job time: 116 sec

GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: April 25, 2002, 11:03:56 ; Search time 17.11 Seconds

(without alignments)  
1010.615 Million cell updates/sec

Title: US-09-815-306-1

Perfect score: 1185

Sequence: 1 MNIGSPWKGSLILLVSNL.....HKIDNYLKLKCRITHHNNC 227

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 219241 seqs, 76174552 residues

Total number of hits satisfying chosen parameters: 219241

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

1: PIR\_68:\*

2: PIR1:\*

3: PIR3:\*

4: PIR4:\*

#### SUMMARIES

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Result No.	Score	Query Match	Length	ID	Description
1	1185	100.0	227	1 LCHU	prolactin precursor
2	1162.5	98.1	228	1 A61402	prolactin precursor
3	953	80.4	229	1 LCPG	prolactin precursor
4	938	79.2	229	1 JCA631	prolactin precursor
5	887	74.9	199	2 S15131	prolactin precursor
6	876	73.9	199	1 LCHO	prolactin - Arabid
7	876	73.9	199	1 LCHO	prolactin - horse
8	875	73.8	229	1 LCHO	prolactin precursor
9	875	73.8	229	1 LCHO	prolactin precursor
10	861	72.7	199	2 PNO128	prolactin - goat
11	805	67.9	229	2 A60972	prolactin - sei wh
12	793	66.9	229	2 A61133	prolactin precursor
13	790.5	66.7	198	1 A60620	prolactin - green
14	772	65.1	198	2 S18882	prolactin - Americ
15	737	62.2	199	2 JS0430	prolactin - elepha
16	729.5	61.6	226	1 LCRF	prolactin precursor
17	724.5	61.1	226	1 A49159	prolactin - golden
18	705.5	59.5	228	1 LCHO	prolactin precursor
19	692.5	58.4	207	2 A60969	prolactin precursor
20	601.5	50.8	200	2 S34604	prolactin - marble
21	521	44.0	236	2 A37930	prolactin - lactogen
22	494	41.7	134	2 I51233	prolactin - lactogen
23	494	41.7	221	2 A41407	prolactin - lactogen
24	486.5	41.1	236	2 A40143	prolactin - lactogen
25	472.5	39.9	238	2 B36284	prolactin - lactogen
26	462	39.0	222	2 A26489	prolactin - lactogen
27	439	37.0	238	2 A34078	prolactin - lactogen
28	437.5	36.9	238	2 A31417	prolactin - lactogen
29	436	36.8	221	2 A25951	prolactin - lactogen

30	416	35.1	224	2 A40919	prolactin-like pro
31	413.5	34.9	239	2 S04966	prolactin-like pro
32	410.5	34.6	224	2 A40062	prolactin-like pro
33	410	34.6	223	2 A49160	prolactin-like pro
34	409	34.5	237	2 S14722	prolactin-like pro
35	400.5	33.8	244	2 A22722	prolactin-like pro
36	376	31.7	213	2 B34078	prolactin-like pro
37	371	31.3	230	2 A37399	prolactin-like pro
38	356	30.0	224	2 S48671	prolactin-like pro
39	356	30.0	224	2 A05086	prolactin-like pro
40	355	30.0	224	2 S05648	prolactin-like pro
41	350	29.5	224	2 A23159	prolactin-like pro
42	349.5	29.5	227	2 A24911	prolactin-like pro
43	326.5	27.6	239	2 A46603	prolactin-like pro
44	315.5	26.6	209	2 S30541	prolactin-like pro
45	313.5	26.5	212	2 I51275	prolactin-like pro

#### ALIGNMENTS

##### RESULT 1

LCHU

prolactin precursor [validated] - human

C:Species: Homo sapiens (man)

C:Date: 30-Jun-1979 #sequence\_revision 23-Oct-1981 #text\_change 08-Dec-2000

C:Accession: A90998; A92318; A28867; PNO089; A92177; A01505

R:Truong, A.T.; Duez, C.; Belayew, A.; Renard, A.; Pictet, R.; Bell, G.I.; Martial, J

EMBO J. 3, 429-437, 1984

A:Title: Isolation and characterization of the human prolactin gene.

A:Reference number: A90998; MUID:84182307

A:Accession: A90998

A:Molecule type: DNA

A:Residues: 1-227 <TRU>

R:Cooke, N.E.; Colt, D.; Shine, J.; Baxter, J.D.; Martial, J.A.

J. Biol. Chem. 256, 4007-4016, 1981

A:Title: Human prolactin: cDNA structural analysis and evolutionary comparisons.

A:Reference number: A92318; MUID:81168179

A:Accession: A92318

A:Molecule type: mRNA

A:Residues: 1-227 <COO>

A:Cross-references: GB:V00566; GB:J00299; MUID:934210; PIDN:CA23829.1; PID:934211

R:Takahashi, H.; Nabeshima, Y.; Nabeshima, Y.; Ogata, K.; Takeuchi, S.

J. Biochem. 95, 1491-1499, 1984

A:Title: Molecular cloning and nucleotide sequence of DNA complementary to human dect

A:Reference number: A28867; MUID:84264464

A:Accession: A28867

A:Molecule type: mRNA

A:Residues: 1-205, 'H', 207-227 <TAK>

A:Cross-references: EMBL:M29386

A:Note: the authors translated the codon CAT for residue 206 as Asp

R:Markovits, N.P.; Golovin, S.Y.; Zelenin, S.M.; Morozova, T.V.; Karginov, V.A.; Che

Bioorg. Khim. 13, 1687-1690, 1987

A:Title: Synthesis, cloning and sequencing of cDNA complementary to mRNA of prolactin

A:Reference number: PNO089; MUID:88221681

A:Accession: PNO089

A:Molecule type: mRNA

A:Residues: 45-227 <MER>

A:Experimental source: pituitary gland

R:Shome, B.; Parlow, A.F.

J. Clin. Endocrinol. Metab. 45, 1112-1115, 1977

A:Title: Human pituitary prolactin (hPR): the entire linear amino acid sequence.

A:Reference number: A92762; MUID:78046207

A:Accession: A92762

A:Molecule type: protein

A:Residues: 29-109, 'YS', 112, 'L', 115-132, 'X', 134-171, 'D', 173-189, 'SE', 192-227 <SHO>

R:Jacobs, J.W.; Niall, H.D.

J. Biol. Chem. 250, 3629-3636, 1975

A:Title: High sensitivity automated sequence determination of polypeptides.

A:Reference number: A92177; MUID:75151509

A:Accession: A92177

A:Molecule type: protein

A:Residues: 29-52, 'L' <JAC>  
 C:Genetics:  
 A:Gene: GDB:PRL  
 A:Cross-references: GDB:119517; OMIM:176760  
 A:Map position: 6p22.2-6p22.1  
 A:Introns: 9/3; 68/3; 104/3; 164/3  
 C:Superfamily: prolactin  
 C:Keywords: anterior pituitary; hormone; lactation; placenta  
 F:1-28/Domain: signal sequence #status predicted <SIG>  
 F:29-227/Product: prolactin #status experimental <MAT>  
 F:32-39, 86-202, 219-227/Disulfide bonds: #status predicted

Query Match 100.0%; Score 1185; DB 1; Length 227;  
 Best Local Similarity 100.0%; Pred. No. 3, 5e-89;  
 Matches 227; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MNKSGPMKGSLLLLVSNLLCQSVAPLPICPGCAACQVTLRDLFRAVYLSHYIHL 60  
 |||||  
 DB 1 MNKSGPMKGSLLLLVSNLLCQSVAPLPICPGCAACQVTLRDLFRAVYLSHYIHL 60  
 OY 61 SEMSEFDRKRYTHGRGFTTKAINSCHTSSLATPEDEKQAOQMNOKDFLSLIVSLRSMN 120  
 |||||  
 DB 61 SEMSEFDRKRYTHGRGFTTKAINSCHTSSLATPEDEKQAOQMNOKDFLSLIVSLRSMN 120  
 OY 121 EPLVHLVTEVRGMOEAPAILSKAVEIEQTRKRLLEGMLIVSQVHPETKENEIYPVWSG 180  
 |||||  
 DB 121 EPLVHLVTEVRGMOEAPAILSKAVEIEQTRKRLLEGMLIVSQVHPETKENEIYPVWSG 180  
 OY 181 LPSLOMADEESRLSAVYNLLHCLRDSSHIDNYLKLKCRITIHNNNC 227  
 |||||  
 DB 181 LPSLOMADEESRLSAVYNLLHCLRDSSHIDNYLKLKCRITIHNNNC 227

RESULT 2  
 A61402  
 prolactin precursor, placental (clone 204) - human  
 C:Species: Homo sapiens (man)  
 C:Date: 09-Sep-1994 #sequence\_revision 09-Sep-1994 #text\_change 16-Feb-1997  
 C:Accession: A61402  
 R:Hiraoka, Y.; Tatsumi, K.; Shiozawa, M.; Also, S.; Fukasawa, T.; Yasuda, K.; Miyai, K.  
 Mol. Cell. Endocrinol. 75, 71-80, 1991  
 A:Title: A placenta-specific 5' non-coding exon of human prolactin.  
 A:Reference number: A61402; MUID:91267286  
 A:Accession: A61402  
 A:Status: preliminary; not compared with conceptual translation  
 A:Molecule type: mRNA  
 A:Residues: 1-228 <HIR>  
 C:Superfamily: prolactin  
 C:Keywords: alternative splicing  
 F:87-203, 220-228/Disulfide bonds: #status predicted

Query Match 98.1%; Score 1162.5; DB 2; Length 228;  
 Best Local Similarity 99.1%; Pred. No. 2, 3e-87;  
 Matches 226; Conservative 0; Mismatches 1; Indels 1; Gaps 1;

OY 1 MNKSGPMK GSLLLLVSNLLCQSVAPLPICPGCAACQVTLRDLFRAVYLSHYIHL 59  
 |||||  
 DB 1 MNKSGPMKGSLLLLVSNLLCQSVAPLPICPGCAACQVTLRDLFRAVYLSHYIHL 60  
 OY 60 LSSMSEFDRKRYTHGRGFTTKAINSCHTSSLATPEDEKQAOQMNOKDFLSLIVSLRSM 119  
 |||||  
 DB 61 LSSMSEFDRKRYTHGRGFTTKAINSCHTSSLATPEDEKQAOQMNOKDFLSLIVSLRSM 120  
 OY 120 NEPLVHLVTEVRGMOEAPAILSKAVEIEQTRKRLLEGMLIVSQVHPETKENEIYPVWS 179  
 |||||  
 DB 121 NEPLVHLVTEVRGMOEAPAILSKAVEIEQTRKRLLEGMLIVSQVHPETKENEIYPVWS 180  
 OY 180 GLPSLOMADEESRLSAVYNLLHCLRDSSHIDNYLKLKCRITIHNNNC 227  
 |||||  
 DB 181 GLPSLOMADEESRLSAVYNLLHCLRDSSHIDNYLKLKCRITIHNNNC 228

RESULT 3  
 LCPG  
 prolactin precursor - pig  
 C:Species: Sus scrofa domestica (domestic pig)  
 C:Date: 24-Apr-1984 #sequence\_revision 27-Jun-1994 #text\_change 18-Jun-1999  
 C:Accession: S04077; A60971; A01507  
 R:Schulz-Aellen, M.F.; Schmidt, E.; Movva, R.N.  
 Nucleic Acids Res. 17, 3295, 1989  
 A:Title: Nucleotide sequence of porcine prolactin cDNA.  
 A:Reference number: S04077; MUID:89263739  
 A:Accession: S04077  
 A:Molecule type: mRNA  
 A:Residues: 1-229 <SCH>  
 A:Cross-references: EMBL:X14068; NID:92082; PIDN:CAA32231.1; PID:g2083  
 R:Kato, Y.; Hirai, T.; Kato, T.  
 J. Mol. Endocrinol. 4, 135-142, 1990  
 A:Title: Molecular cloning of cDNA for porcine prolactin precursor.  
 A:Reference number: A60971; MUID:90262633  
 A:Accession: A60971  
 A:Molecule type: mRNA  
 A:Residues: 1-3, 'R', '5', 'X', '7', '42', 'V', '44-229 <KAT>  
 R:Li, C.H.  
 Int. J. Pept. Protein Res. 8, 205-224, 1976  
 A:Title: Studies on pituitary lactogenic hormone. The primary structure of the porcine  
 A:Reference number: A91770; MUID:76189476  
 A:Accession: A01507  
 A:Molecule type: protein  
 A:Residues: 31-42, 'V', '44-151, 'E', '153-225, 'N', '227-229 <LIC>  
 C:Superfamily: prolactin  
 C:Keywords: anterior pituitary; hormone; lactation; placenta  
 F:1-30/Domain: signal sequence #status predicted <SIG>  
 F:31-229/Product: prolactin #status experimental <MAT>  
 F:34-41, 88-204, 221-229/Disulfide bonds: #status experimental

Query Match 80.4%; Score 953; DB 1; Length 229;  
 Best Local Similarity 79.0%; Pred. No. 2, 6e-70;  
 Matches 181; Conservative 24; Mismatches 22; Indels 2; Gaps 1;

OY 1 MNKSGPMKGS-LLLLVSNLLCQSVAPLPICPGCAACQVTLRDLFRAVYLSHYIH 58  
 |||||  
 DB 1 MDNTGSSOKGSLLLVSNLLCQSVAPLPICPGCAACQVTLRDLFRAVYLSHYIH 60  
 OY 59 NLSEMEFDRKRYTHGRGFTTKAINSCHTSSLATPEDEKQAOQMNOKDFLSLIVSLRS 118  
 |||||  
 DB 61 NLSEMEFDRKRYTHGRGFTTKAINSCHTSSLATPEDEKQAOQMNOKDFLSLIVSLRS 120  
 OY 119 WNEPLVHLVTEVRGMOEAPAILSKAVEIEQTRKRLLEGMLIVSQVHPETKENEIYPVW 178  
 |||||  
 DB 121 WNEPLVHLVTEVRGMOEAPAILSKAVEIEQTRKRLLEGMLIVSQVHPETKENEIYPVW 180  
 OY 179 SGPLSLOMADEESRLSAVYNLLHCLRDSSHIDNYLKLKCRITIHNNNC 227  
 |||||  
 DB 181 SGPLSLOMADEESRLSAVYNLLHCLRDSSHIDNYLKLKCRITIHNNNC 229

RESULT 4  
 JC4631  
 prolactin precursor - cat  
 C:Species: Felis silvestris catus (domestic cat)  
 C:Date: 10-Apr-1996 #sequence\_revision 24-May-1996 #text\_change 16-Jul-1999  
 C:Accession: JC4631  
 R:Marren, W.C.; Bentle, K.A.; Bogostan, G.  
 Gene 168, 247-249, 1996  
 A:Title: Cloning of the cDNAs coding for cat growth hormone and prolactin.  
 A:Reference number: JC4631; MUID:96194906  
 A:Accession: JC4631  
 A:Molecule type: mRNA  
 A:Residues: 1-229 <MAR>  
 A:Cross-references: GB:U25974; NID:98257770; PIDN:AAA67295.1; PID:g825771  
 A:Experimental source: pituitary  
 C:Genetics:





A:Molecule type: protein  
A:Residues: 31-39, 'X', '41-60, 'N', '62-99, 'XX', '102, 'XX', '105-107, 'X', '109-121, 'XX', '124-147, 'X'  
R:Yudaev, N.A.; Penkov, Y.A.; Elizavova, G.P.; Han, Z.; Nikolaeva, O.P.  
Bioorg. Khim. 1, 97-112, 1975  
A>Title: The primary structure of bovine prolactin.  
A:Accession: JN0405  
A:Reference number: JN0405  
A:Molecule type: protein  
A:Residues: 31-64, 'Q', '66-117, '119-130, 'G', '132-147, 'G', '149-160, 'XX', '163-229 <YUD>  
R:Grif, L.; Cseh, G.; Nagy, I.; Kurecz, M.  
Acta Biochim. Biophys. Acad. Sci. Hung. 5, 299-303, 1970  
A>Title: An evidence for deamidation of prolactin monomer.  
A:Reference number: A90002; PMID:71150631  
A:Accession: A90002  
A:Molecule type: protein  
A:Residues: 31-46 <GRA>  
R:Kim, B.G.; Brooks, C.L.  
Biochem. J. 296, 41-47, 1993  
A>Title: Isolation and characterization of phosphorylated bovine prolactin.  
A:Reference number: S39389; PMID:94071839  
A:Accession: S39389  
A:Molecule type: protein  
A:Residues: 52-72, '120-133 <KIM>  
R:Miller, W.L.; Thirion, J.  
Endocrinology 107, 851-854, 1980  
A>Title: Cloning of DNA complementary to bovine prolactin mRNA.  
A:Reference number: 145968; PMID:80245858  
A:Accession: 145968  
A>Status: preliminary; translated from GB/EMBL/DDBJ  
A:Molecule type: mRNA  
A:Residues: 129-229 <MI2>  
A:Cross-references: GB:I425007; NID:g163609; PIDN:AAA30732.1; PID:g163610  
R:Rubtsov, P.M.; Oganesyan, R.G.; Gorbulov, V.G.; Skryabin, K.G.; Baev, A.A.  
Mol. Biol. 22, 117-121, 1988  
A>Title: Genetic engineering of peptide hormones. II. Possible polymorphism of preprolac  
A:Reference number: 145972  
A:Accession: 145972  
A>Status: preliminary; translated from GB/EMBL/DDBJ  
A:Molecule type: mRNA  
A:Residues: 1-9, 'A', '10-68 <RU2>  
A:Cross-references: GB:M36873; NID:g163623; PIDN:AAA30737.1; PID:g163626  
A:Accession: 145973  
A>Status: preliminary; translated from GB/EMBL/DDBJ  
A:Molecule type: mRNA  
A:Residues: 96-229 <RU3>  
A:Cross-references: GB:M36874; NID:g163624; PIDN:AAA30738.1; PID:g163627  
R:Carroll, S.M.; Narayan, P.; Rottman, F.M.  
Mol. Cell. Biol. 10, 4456-4465, 1990  
A>Title: N-6-methyladenosine residues in an intron-specific region of bovine prolactin pr  
A:Reference number: 145969; PMID:90355957  
A:Accession: 145969  
A>Status: translation not shown; translated from GB/EMBL/DDBJ  
A:Molecule type: DNA  
A:Residues: 167-229 <CAR>  
A:Cross-references: GB:M34535; NID:g163611; PIDN:AAA30733.1; PID:g163612  
R:Camper, S.A.; Luck, D.N.; Yao, Y.; Woychik, R.P.; Goodwin, R.G.; Lyons, R.H.; Rottman,  
DNA 3, 237-249, 1984  
A>Title: Characterization of the bovine prolactin gene.  
A:Reference number: 145970; PMID:84260950  
A:Accession: 145970  
A>Status: preliminary; translated from GB/EMBL/DDBJ  
A:Molecule type: DNA  
A:Residues: 1-17, 'L', '18-38 <CAM>  
A:Cross-references: GB:K01937; NID:g163614; PID:g163616  
C:Genetics:  
A:Introns: 10/1; 30/3  
A>Note: List of introns may be incomplete  
C:Superfamily: prolactin  
C:Keywords: anterior pituitary; hormone; lactation; phosphoprotein; placenta  
F:1-30/domain: signal sequence #status predicted &ltSIG>  
F:31-229/Product: prolactin #status experimental &ltMAT>  
F:34-41, 88-204, 221-229/Disulfide bonds: #status experimental

Query Match	73.9%	Score 876	DB 1	Length 229
Best Local Similarity	72.5%	Pred. No. 4.7e-64		
Matches 166	Conservative 26	Mismatches 35	Indels 2	Gaps 1

  

QY	1	MNIKSPWKG-	-LLLLLVNLLCQSAVPLPICGGAARCVTLRLDPRVAVLSHYH	58
	1			
Db	1	MDKSSQKGRSLLLLVNLLCQGVAVTFCNPGPCNVSLRLDPRVAVLSHYH	60	
OY	59	NLSSEMFSEFDRYHGRGFTIKAINSCHTSLAPPEKEQAQNMKQDFLSLYILRS	118	
Db	61	DLSSEMFSEFDRYHGRGFTIKAINSCHTSLAPPEKEQAQNHHEWLSLILGLRS	120	
OY	119	WNEPLVHLVTEVRGMOEAPALISKAVEIEBOTKRLGEMELIYSQVHPETKENEIPEW	178	
Db	121	WNDPLVHLVTEVRGKAGPADALISPAIETIEENKRLLEGMEMIFQVIPGAKETPEPYW	180	
OY	179	SGLPGLQMADESRISAYVYNIHLHCRRSHKIDNYLKLKLCRIHNNNC	227	
Db	181	SGLPGLQKDEDAISAYVNIHLHCRRSSKIDYLLKLKLCRIHNNNC	229	

## RESULT 8

prolactin precursor - sheep

C; Date: 24-Apr-1984 #sequence\_revison 01-Aug-1997 #text\_change 18-Jun-1999  
C; Accession: 183983. 503104. 150200. 100050. 101770. 524735. 101500

R;Le Provost, F.; Leroux, C.; Martin, P.; Gaye, P.; Djlane, J. Neuroendocrinology 60, 305-313. 1994

A; Reference number: I60543; MUID:95059806

A/Status: preliminary; translated from GB/EMBL/DBJ

A:Residues: 1-100, 'X', 102-229 <LEX>

R;Adams, T.E.; Baker, L.; Brandon, M.R.

A; Title: Cloning and nucleotide sequence of an ovine prolactin cDNA

A/Accession: S02104  
A/Molecule type: tRNA

A;Residues: 1-229 <ADA>  
A;Cross-references: EMBL.Y13483. NID.G1333. BION.G2231630 1. ETC -1334

R; Vallina, S.; Kwok, S.; Edner, K.E.  
Gene 77, 349-359, 1989

A: Reference number: JS0200: MUID:89326152

A: Molecule type: mRNA

A; Cross-references: G

R; Li, C.H.; Dixon, J.S.; Lo, T.B.; Schmidt, K.D.; Pankov, Y.A.

A; Title: Studies on pituitary lactogenic hormone. XXX. The pri

A;Accession: A90050

A;Residues: 31-39,'D',41-117,119-229 <LII>

Int. J. Pept. Protein Res. 8, 205-224, 1976

A:Accession: A91770  
A:Reference number: A91770; MUID:76189476

A;Molecule type: protein  
A;Residues: 31-39, 'D', 41-229 <1.T2>

Arch. Biochem. Biophys. 304, 58-64, 1993

A: Reference number: S34736; MUID:93312022



```

Db      1 MSNRGASLKGLFLAVILVSNLTLLTKEGVTSLPICPGSVNCOVSLGELFDRACKLSHTIH 60
QY      59 NLSEMFSEDPKRYTHRGFTITKAINSCHTSSLATPEDEKQAOQMNOKDFLSLIVSILRS 118
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      61 YLSSEFNEDEERYAOGRGFTTKAVNGCHTSSLTPEDKEQAOQHEDLLNLVGVLS 120
QY      119 WNEPLHLVTEVRGMOEAPAILSKAVEIEQOTKRLLEGMLIVSQVHPETKENEIYPW 178
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      121 WNDPLHLHASEVQRIKEAPDTILMKAVEIEQOKRLLEGMEKIVGVHSGDAGNETIYSHW 180
QY      179 SGLPSIQMADEESRLSAVYNLHCLLRDSHKIDNYLKLKCRITIHNNC 227
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      181 DGLPSIQLADEDSRLFAFYNLHCLLRDSHKIDNYLKLKCRILIHNSNC 229

```

```

RESULT 12
prolactin precursor - turkey
C:Species: Meleagris gallopavo (common turkey)
C>Date: 10-Mar-1994 #sequence_revision 07-Apr-1994 #text_change 11-May-2000
C:Accession: A61133; S10170; A61528
R:Wong, E.A.; Ferrin, N.H.; Silaby, J.L.; El Hachimi, M.E.
Gen. Comp. Endocrinol. 83, 18-26, 1991
A>Title: Cloning of a turkey prolactin cDNA: expression of prolactin mRNA throughout the
A:Reference number: A61133; MUID:91348480
A:Accession: A61133
A:Molecule type: mRNA
A:Residues: 1-155, 'R', 157-229 <MO2>
A:Cross-references: GB:005952; NID:9454094; PIDN:AB60604.1; PID:9454095
A:Keywords: C.N.; Zadorov, D.; Kuhnlein, U.
Nucleic Acids Res. 18, 3071, 1990
A>Title: Nucleotide sequence of turkey prolactin.
A:Reference number: S10170; MUID:90272435
A:Accession: S10170
A:Molecule type: mRNA
A:Residues: 21-229 <KAR>
A:Cross-references: EMBL:X51769; NID:964095; PIDN:CAA36071.1; PID:964096
R:Corcoran, D.H.; Proudman, J.A.
Comp. Biochem. Physiol. B 99, 563-570, 1991
A>Title: Isoforms of turkey prolactin: evidence for differences in glycosylation and in
A:Reference number: A61528; MUID:92119931
A:Accession: A61528
A:Molecule type: protein
A:Residues: 31-70 <COR>
C:Superfamily: prolactin
C:Keywords: hormone; pituitary
F:1-30/Domains: signal sequence #status predicted <SIG>
F:31-229/Product: prolactin #status predicted <MAT>
F:34-41, 88-204, 221-229/Disulfide bonds: #status predicted

```

```

Query Match      66.9%; Score 793; DB 2; Length 229;
Best Local Similarity 65.9%; Pred. No. 2.6e-57;
Matches 151; Conservative 35; Mismatches 41; Indels 2; Gaps 2;
QY      1 MNKSGPMKGSLL-LLVSNLLC-QSVAPLPICGGAACOVLRDLFDRAVVLSHTIH 58
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      1 MSNKGASLKGLFLAVILVSNLTLLTKEGVTSLPICSGSVNCOVSLGELFDRACKLSHTIH 60
QY      59 NLSEMFSEDPKRYTHRGFTITKAINSCHTSSLATPEDEKQAOQMNOKDFLSLIVSILRS 118
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      61 FLSSIEFNEDEERYAOGRGFTTKAVNGCHTSSLTPEDKEQAOQHEDLLNLVGVLS 120
QY      119 WNEPLHLVTEVRGMOEAPAILSKAVEIEQOTKRLLEGMLIVSQVHPETKENEIYPW 178
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      121 WNDPLHLHASEVQRIKEAPDTILMKAVEIEQOKRLLEGMEKIVGVHSGDAGNETIYSHW 180
QY      179 SGLPSIQMADEESRLSAVYNLHCLLRDSHKIDNYLKLKCRITIHNNC 227
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      181 DGLPSIQLADEDSRLFAFYNLHCLLRDSHKIDNYLKLKCRILIHNSNC 229

```

```

RESULT 13
prolactin - green sea turtle
C:Species: Chelonia mydas (green sea turtle)
C>Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 31-Dec-1993
C:Accession: A60620
R:Yasuda, A.; Kawachi, H.; Papkoff, H.
Gen. Comp. Endocrinol. 80, 363-371, 1990
A>Title: The complete amino acid sequence of prolactin from the sea turtle (Chelonia
A:Reference number: A60620; MUID:91146884
A:Accession: A60620
A:Molecule type: protein
A:Residues: 1-198 <YAS>
A>Note: 55-Leu, 145-Val, 148-Arg, and 171-Met were also found
C:Superfamily: prolactin
C:Keywords: hormone; pituitary
F:4-11, 58-173, 190-198/Disulfide bonds: #status experimental

```

```

Query Match      66.7%; Score 790.5; DB 1; Length 198;
Best Local Similarity 73.4%; Pred. No. 3.5e-57;
Matches 146; Conservative 26; Mismatches 26; Indels 1; Gaps 1;
QY      29 LPICGGAACOVLRDLFDRAVVLSHTIHNLSEMFSEDPKRYTHRGFTITKAINSCHT 88
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      1 LPICSGSVNCOVSLGELFDRACKLSHTIHSLSEMFNEDEERYAOGRGFTTKAINSCHT 60
QY      89 SLATPEDEKQAOQMNOKDFLSLIVSILRSWNEPLHLVTEVRGMOEAPAILSKAVEIE 148
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      61 SLTPPEDEKQAOQHEDLLNLVGVLSWNDPLHLVSEVQRIKEAPDTIL-KAVEIE 119
QY      149 EOTKRLLEGMLIVSQVHPETKENEIYPWGSGLPSIQMADEESRLSAVYNLHCLLRDSH 208
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      120 EODKRLLEGMEKIVGVHPGELIENLSPWSGLPSIQVDEDSRLFAFYNLHCLLRDSH 179
QY      209 KIDNYLKLKCRITIHNNC 227
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      180 KIDNYLKLKCRILIHNSNC 198

```

```

RESULT 14
prolactin - American mink (fragment)
C:Species: Mustela vison (American mink)
C>Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 16-Jul-1999
C:Accession: S18882
R:Bondar, A.A.; Golovin, S.J.; Mertvelsov, N.P.
submitted to the EMBL Data Library, November 1991
A:Reference number: S18882
A:Accession: S18882
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-175 <BON>
A:Cross-references: EMBL:X63235; NID:91182; PIDN:CAA44910.1; PID:91183
C:Superfamily: prolactin

```

```

Query Match      65.1%; Score 772; DB 2; Length 175;
Best Local Similarity 80.0%; Pred. No. 9.6e-56;
Matches 140; Conservative 23; Mismatches 12; Indels 0; Gaps 0;
QY      53 LSHYIHLSEMFSEDPKRYTHRGFTITKAINSCHTSSLATPEDEKQAOQMNOKDFLSL 112
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      1 LSHYIHLSEMFNEFGRYAOGRGFTTKAINSCHTSSLTPEDKEQAOQHEDLLNL 60
QY      113 VSLRSWNEPLHLVTEVRGMOEAPAILSKAVEIEQOTKRLLEGMLIVSQVHPETKEN 172
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      61 LRVLRSWNDPLHLVSEVRGMOEAPDLSRAIEIEQONRLLEGMEKIVGVHPGVREN 120
QY      173 EIVPWSGLPSIQMADEESRLSAVYNLHCLLRDSHKIDNYLKLKCRITIHNNC 227
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db      121 EIVSWWSGLPSIQMADEDSRLFAFYNLHCLLRDSHKIDNYLKLKCRITIHNSNC 175

```

**RESULT 15**

JS0430

prolactin - elephant

C;Species: Elephantidae gen. sp. (elephant)  
C;Date: 07-Sep-1990 #sequence revision 07-S

C:Date: 07-Sep-1990 #sequence\_revision 07-Sep-1990 #text\_change 16-Feb-1997  
C:Accession: JS0430

C;Accession: JS0430  
R;Li, C.H.: oosthu

Int. J. Pept. Protein Res. 33, 67-69, 1988

A;Title: Primary structure of elephant pit

A:Reference number: JS0430; MUID:89254274

A:Accession: JS0430

```
A: Molecule type: pr
A: Residues: 1-199 <
```

A;residues: 1-199 <LIC>  
A;Note: residues 1-29, 3

h bovine prolactin

C;Superfamily: prolactin

C;Keywords: anterior pit

F,4-11,58-174,191-199/Disulfide bonds: #status predicted

Query Match	62.28;	Score 737;	DB 2;	Length 199;
Post Local[Sim]arity	65.88;	Need No	7.00-E3;	

Best Local Similarity 65.88; Pred. No. 7.9e-53;  
Matches 131; Conservative 36; Mismatches 37

Matches	131;	Conservative	36;	Mismatches	32;	Indels	0;	Gaps	0;
---------	------	--------------	-----	------------	-----	--------	----	------	----

29 LPICPGAARCQVTLRDLFDRAWLSHYIHNLSSEMFSEFDKRYTHGCFITKAINSCHT 88

Db 1 IPVCPRGSVRCQVSLPDLFDRAVMLSHYIHSLSSDMEHFEFNKQYALGRGFI PRAINSCHT 60

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89 SSLATPEDKEQAOQMNQKDFLSLIVSILRSWNNEPLVHLVTEVRGMQEAPEAILSKAVEIE 148

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Db 61 SSISTPEDKDAQQTHHEVLMDLILGLLSRWNDPLDLHLASEVHSLPKAPSALLTKATEVK 120

149 EQIKRLLEGMEIIVSQVHPETRENEYVWWSGLPSLOMADEESRLSAYNLLHCLRDSH 208

Db 121 EENQRLLEGIEKIVDQVHPGARENKAYSWSGLPSLOTDEBARLFAFYNNLEFCLRRDSH 180

209 KIDNYLCKLCRI1HNNNC 227

DD 181 KIDSYLKLKCR1VYNNNC 199

Search completed: April 25, 2002, 11:07:18  
Job time: 202 sec

Job time: 202 sec

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This Page Blank (uspto)

GenCore version 4.5  
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: April 25, 2002, 11:03:55 ; Search time 12.65 Seconds

(without alignments)  
403.814 Million cell updates/sec

Title: US-09-815-306-1

Perfect score: 1185

Sequence: 1 MNKIGSPWKSLLLLVSNL.....HKIDNYLKLKRIIHNMC 227

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 212252 seqs, 22503292 residues

Total number of hits satisfying chosen parameters: 212252

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued\_Patents\_AA.\*

1: /cgn2\_6/ptodata/2/1aa/5A.COMB.pep.\*

2: /cgn2\_6/ptodata/2/1aa/5B.COMB.pep.\*

3: /cgn2\_6/ptodata/2/1aa/6A.COMB.pep.\*

4: /cgn2\_6/ptodata/2/1aa/6B.COMB.pep.\*

5: /cgn2\_6/ptodata/2/1aa/PCRTUS.COMB.pep.\*

6: /cgn2\_6/ptodata/2/1aa/Backfile1.pep.\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	1043	88.0	199	3	US-08-737-248-7
2	1043	88.0	351	1	US-08-196-350-1
3	887	74.9	199	3	US-08-737-248-10
4	877	74.0	199	3	US-08-737-248-12
5	876	73.9	199	3	US-08-737-248-8
6	871	73.5	199	3	US-08-737-248-14
7	797	67.3	199	3	US-08-737-248-13
8	796	67.2	199	3	US-08-737-248-11
9	786.5	66.4	198	3	US-08-737-248-6
10	754	63.6	199	3	US-08-737-248-2
11	754	63.6	426	3	US-08-737-248-4
12	748	63.1	199	3	US-08-737-248-5
13	737	62.2	199	3	US-08-737-248-9
14	667	56.3	197	3	US-08-737-248-15
15	667	56.3	197	3	US-08-737-248-17
16	630	53.2	125	3	US-08-985-526-25
17	630	53.2	253	3	US-08-985-526-27
18	621	52.4	197	3	US-08-737-248-16
19	370	31.2	199	3	US-08-737-248-23
20	280	23.6	187	3	US-08-737-248-18
21	280	23.6	187	3	US-08-737-248-19
22	270	22.8	177	3	US-08-737-248-21
23	269.5	22.7	188	3	US-08-737-248-20
24	263	22.2	236	4	US-09-602-848-2
25	245	20.7	223	4	US-09-602-848-4
26	213.5	18.0	231	1	US-07-656-566-3
27	210.5	17.8	207	1	US-07-656-566-2

28	206	17.4	191	3	US-08-737-248-22	Sequence 22, Appl
29	204.5	17.3	217	3	US-08-589-028-10	Sequence 10, Appl
30	204.5	17.3	217	3	US-08-784-582-10	Sequence 10, Appl
31	204.5	17.3	217	4	US-08-785-271-10	Sequence 11, Appl
32	204.5	17.3	217	4	US-08-759-628-11	Sequence 51, Appl
33	201.5	17.0	217	1	US-08-469-486-51	Sequence 51, Appl
34	201.5	17.0	217	2	US-08-469-658-51	Sequence 51, Appl
35	198.5	16.8	217	2	US-09-105-651-2	Sequence 2, Appl
36	193.5	16.3	217	1	US-08-187-756C-4	Sequence 4, Appl
37	193.5	16.3	217	2	US-08-710-324A-4	Sequence 4, Appl
38	192	16.2	191	1	US-08-093-383-3	Sequence 3, Appl
39	190	16.0	191	1	US-07-885-689A-29	Sequence 29, Appl
40	190	16.0	193	2	US-08-383-621-2	Sequence 2, Appl
41	190	16.0	193	3	US-08-459-906-2	Sequence 2, Appl
42	190	16.0	199	1	US-07-801-164A-4	Sequence 4, Appl
43	187.5	15.8	216	2	US-09-105-651-1	Sequence 11, Appl
44	186	15.7	198	1	US-08-187-756C-5	Sequence 5, Appl
45	186	15.7	198	2	US-08-710-324A-5	Sequence 5, Appl

#### ALIGNMENTS

RESULT 1  
US-08-737-248-7  
Sequence 7, Application US/08737248  
Patent No. 6114305  
GENERAL INFORMATION:  
APPLICANT: Guemene, Daniel  
APPLICANT: Zadworny, David  
TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR  
NUMBER OF SEQUENCES: 23  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: WEISER & ASSOCIATES  
STREET: 230 South Fifteenth Street, Suite 500  
CITY: Philadelphia  
STATE: PA  
COUNTRY: USA  
ZIP: 19102  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patentin Release #1.0, Version #1.30  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/737,248  
FILING DATE: 28-APR-1997  
CLASSIFICATION: 424  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: PCT/FR95/00576  
FILING DATE: 03-MAY-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: FR 94/05550  
FILING DATE: 05-MAY-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Weiser, Gerard J.  
REGISTRATION NUMBER: 19,763  
REFERENCE/DOCKET NUMBER: 989,6411P  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 215-875-8363  
TELEFAX: 215-875-8394  
INFORMATION FOR SEQ ID NO: 7:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 199 amino acids  
TYPE: amino acid  
STRANDEDNESS:  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-737-248-7

Query Match 88.0%; Score 1043; DB 3; Length 199;  
Best Local Similarity 100.0%; Pred. No. 2.3e-99;  
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 29 LPICPGGAACQVTLRDLFDRAYVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 88  
DB 1 LPICPGGAACQVTLRDLFDRAYVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 60

QY 89 SSLATPEDEKQAOQMNQKDFLSLIVSLRSWNEPLYHLVTEVRGQAEAPALISKAVEIE 148  
DB 61 SSLATPEDEKQAOQMNQKDFLSLIVSLRSWNEPLYHLVTEVRGQAEAPALISKAVEIE 120

QY 149 EQTKRLLEGMEELIVSQVHETKENETYPWMSGPLSQMADEESRLSAYYNLLHCLRDSH 208  
DB 121 EQTKRLLEGMEELIVSQVHETKENETYPWMSGPLSQMADEESRLSAYYNLLHCLRDSH 180

QY 209 KIDNYLKLKCRITIHNNNC 227  
DB 181 KIDNYLKLKCRITIHNNNC 199

RESULT 2  
US-08-196-350-1  
; Sequence 1, Application US/08196350  
; Patent No. 5585099  
; GENERAL INFORMATION:  
; APPLICANT: Richards, Sue  
; APPLICANT: Kaplan, Joanne  
; APPLICANT: Mosciak, Richard  
; TITLE OF INVENTION: PROLACTIN AS ADJUVANT  
; NUMBER OF SEQUENCES: 2  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Brad Salcedo  
; STREET: One Kendall Square  
; CITY: Cambridge  
; STATE: MA  
; COUNTRY: U.S.A.  
; ZIP: 02139  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patent Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/196.350  
; FILING DATE:  
; CLASSIFICATION: 424  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Gosz, William G  
; REGISTRATION NUMBER: 27,787  
; REFERENCE/DOCKET NUMBER: GEN 4-1.0  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 6172527868  
; TELEFAX: 6173747225  
; INFORMATION FOR SEQ ID NO: 1:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 351 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: peptide  
; ANTI-SENSE: NO  
; FRAGMENT TYPE: N-terminal  
; ORIGINAL SOURCE:  
; ORGANISM: human prolactin  
US-08-196-350-1

Query Match 88.0%; Score 1043; DB 1; Length 351;  
Best Local Similarity 100.0%; Pred. No. 5.3e-99;  
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 29 LPICPGGAACQVTLRDLFDRAYVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 88

DB 153 LPICPGGAACQVTLRDLFDRAYVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 212  
QY 89 SSLATPEDEKQAOQMNQKDFLSLIVSLRSWNEPLYHLVTEVRGQAEAPALISKAVEIE 148  
DB 213 SSLATPEDEKQAOQMNQKDFLSLIVSLRSWNEPLYHLVTEVRGQAEAPALISKAVEIE 272

QY 149 EQTKRLLEGMEELIVSQVHETKENETYPWMSGPLSQMADEESRLSAYYNLLHCLRDSH 208  
DB 273 EQTKRLLEGMEELIVSQVHETKENETYPWMSGPLSQMADEESRLSAYYNLLHCLRDSH 332

QY 209 KIDNYLKLKCRITIHNNNC 227  
DB 333 KIDNYLKLKCRITIHNNNC 351

RESULT 3  
US-08-737-248-10  
; Sequence 10, Application US/08737248  
; Patent No. 6114305  
; GENERAL INFORMATION:  
; APPLICANT: Guemene, Daniel  
; APPLICANT: Zadworny, David  
; APPLICANT: Karatzas, Costas  
; TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: WEISER & ASSOCIATES  
; STREET: 230 South Fifteenth Street, Suite 500  
; CITY: Philadelphia  
; STATE: PA  
; COUNTRY: USA  
; ZIP: 19102  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patent Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/737,248  
; FILING DATE: 28-APR-1997  
; CLASSIFICATION: 424  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: PCT/FR95/00576  
; FILING DATE: 03-MAY-1995  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: FR 94/05550  
; FILING DATE: 05-MAY-1994  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Weiser, Gerard J.  
; REGISTRATION NUMBER: 19,763  
; REFERENCE/DOCKET NUMBER: 989.6411P  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 215-875-8383  
; TELEFAX: 215-875-8394  
; INFORMATION FOR SEQ ID NO: 10:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 199 amino acids  
; TYPE: amino acid  
; STRANDEDNESS:  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
US-08-737-248-10

Query Match 74.9%; Score 887; DB 3; Length 199;  
Best Local Similarity 81.4%; Pred. No. 2.4e-83;  
Matches 162; Conservative 22; Mismatches 15; Indels 0; Gaps 0;

QY 29 LPICPGGAACQVTLRDLFDRAYVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 88  
DB 1 LPICPGGAACQVTLRDLFDRAYVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 60



[illegible]

```

RESULT 4
US-08-737-248-12
: Sequence 12, Application US/08737248
: Patent No. 6114305
:
: GENERAL INFORMATION:
: APPLICANT: Guemene, Daniel
: APPLICANT: zadworny, David
: APPLICANT: Karatzas, Costas
: TITLE OF INVENTION: Use Of PROLACTIN FOR PREVENTING AND/OR
: TITLE OF INVENTION: TREATING BIRD BROODINESS
: NUMBER OF SEQUENCES: 23
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: WEISER & ASSOCIATES
: STREET: 230 South Fifteenth Street, Suite 500
: CITY: Philadelphia
: STATE: PA
: COUNTRY: USA
: ZIP: 19102
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: PatentIn Release #1.0, Version #1.30
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/08/737,248
: FILING DATE: 28-APR-1997
: CLASSIFICATION: 424
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: PCT/FR95/00576
: FILING DATE: 03-MAY-1995
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: FR 94/05550
: FILING DATE: 05-MAY-1994
: ATTORNEY/AGENT INFORMATION:
: NAME: Weiser, Gerard J.
: REGISTRATION NUMBER: 19,763
: REFERENCE/DOCKET NUMBER: 989,641P
: TELECOMMUNICATION INFORMATION:
: TELEPHONE: 215-875-8383
: TELEFAX: 215-875-8394
: INFORMATION FOR SEQ ID NO: 12:
: SEQUENCE CHARACTERISTICS:
: LENGTH: 199 amino acids
: TYPE: amino acid
: STRANDEDNESS:
: TOPOLOGY: linear
: MOLECULE TYPE: protein
:
US-08-737-248-12

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74.0%: Score 877; DB 3; Length 199;
Query Match Similarity 80.9%; Pred No. 7,5e-82;
Best Local Similarity 80.9%; Pred No. 7,5e-82;
Matches 161; Conservative 22; Mismatches 16; Indels 0; Gaps 0;
QY 29 LPICGGAARCVYTLRDFRAVYVLSHTYHNLSTSEMFEDKRYRHGCFITKAINSCHT 88
1 LPICGGAARCVYVTLRDFRAVYVLSHTYHNLSTSEMFEDKRYRHGCFITKAINSCHT 60
QY 89 SSLAPDEKEDQAQNNOKDFLLIYLSILNSNNEPLYHTLVETRGQGEAPALISRAVEIE 148

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Accession	Sequence	Length
Db	61 SLSLTPPEDEKEDQAQQQHHHEVLLNLILRLVLRSMNDPLYLHYVEFVRGMQEARPAIILSRALIELE	120
Qy	149 EOTKRLLEGEMELIVSQVHPETKENDIYPVWSGLPISLQMADEESTLSAYNLLHCLRDSH	208
Db	121 EONKRLLEGGMRKYGVQVHPGRIKENEVSVWSGLPISLQMADEEDTLFAFYNNLLHCLRDSH	180
Qy	209 KIDNYLKLKLCRIITHNNNC 227	
Db	181 KIDNYLKLKLCRIIYDNC 199	

```

1      RESULT 5
2      US-08-737-248-8
3      : Sequence 8, Application US/08737248
4      : Patent No. 6114305
5      :
6      : GENERAL INFORMATION:
7      :
8      : APPLICANT: Guemene, Daniel
9      : APPLICANT: Zadworny, David
10     : APPLICANT: Karatzas, Costas
11     :
12     : TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
13     : TITLE OF INVENTION: TREATING BIRD BROODINESS
14     :
15     : NUMBER OF SEQUENCES: 23
16     :
17     : CORRESPONDENCE ADDRESS:
18     : ADDRESSEE: WEISER & ASSOCIATES
19     : STREET: 230 South Fifteenth Street, Suite 500
20     : CITY: Philadelphia
21     : STATE: PA
22     : COUNTRY: USA
23     :
24     : ZIP: 19102
25     :
26     : COMPUTER READABLE FORM:
27     : MEDIUM TYPE: Floppy disk
28     :
29     : COMPUTER: IBM PC compatible
30     : OPERATING SYSTEM: PC-DOS/MS-DOS
31     : SOFTWARE: PatentIn Release #1.0, Version #1.30
32     :
33     : CURRENT APPLICATION DATA:
34     : APPLICATION NUMBER: US/08/737,248
35     : FILING DATE: 28-APR-1997
36     :
37     : CLASSIFICATION: 424
38     :
39     : PRIOR APPLICATION DATA:
40     : APPLICATION NUMBER: PCT/FR95/00576
41     : FILING DATE: 03-MAY-1995
42     :
43     : PRIOR APPLICATION DATA:
44     : APPLICATION NUMBER: FR 94/05550
45     : FILING DATE: 05-MAY-1994
46     :
47     : ATTORNEY/AGENT INFORMATION:
48     : NAME: Weiser, Gerard J.
49     : REGISTRATION NUMBER: 19,763
50     : REFERENCE/DOCKET NUMBER: 989.6411P
51     :
52     : TELECOMMUNICATION INFORMATION:
53     : TELEPHONE: 215-875-8383
54     : TELEFAX: 215-875-8394
55     :
56     : INFORMATION FOR SEQ ID NO: 8:
57     : SEQUENCE CHARACTERISTICS:
58     : LENGTH: 199 amino acids
59     : TYPE: amino acid
60     : STRANDEDNESS:
61     : TOPOLOGY: linear
62     :
63     : MOLECULE TYPE: protein
64     :
65     : US-08-737-248-8

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	73.9%;	Score 876;	DB 3;	Length 199;
	Best Local Similarity	79.9%;	Pred. No.	3.2e-82;
	Matches 159;	Conservative 24;	Mismatches 16;	Indels 0;
			Gaps	0;
QY	29 LPICGGAGAACQVTVTDLFDRAVVLSHYITHNLSSMFSEFOKRYTHGRGFITKATNSCHT	88		
Db	1 LPICGSAAVCNCVSRLREFDRAVLISHYIHNLSSEMFEFEDRVYAOGGFPVTAKINSCT	60		
QY	89 SSLAPDEKEAQOQNKKPFLSIIVTSIRSNMEPLYLHLYTEVRGMGEAPEALSKAVEIE	148		
Db	61 SSLSPPEKEEQAOQLIHHEDELNLLIRLVKLSNMDDPLYHLAVSEVRGMGEAPEALSKAIEIE	120		



OY 210 IDNYLKLKCRHNNNC 227  
Db 182 IDTYLKLKCRHNNNC 199

## RESULT 8

US-08-737-248-11  
; Sequence 11, Application US/08737248  
; Patent No. 6114305  
; GENERAL INFORMATION:  
; APPLICANT: Guemene, Daniel  
; APPLICANT: Zadworny, David  
; APPLICANT: Karatzas, Costas  
; TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: WEISER & ASSOCIATES  
; STREET: 230 South Fifteenth Street, Suite 500  
; CITY: Philadelphia  
; STATE: PA  
; COUNTRY: USA  
; ZIP: 19102  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patentin Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/737,248  
; FILING DATE: 28-APR-1997  
; CLASSIFICATION: 424  
; PRIOR APPLICATION NUMBER: PCT/FR95/00576  
; FILING DATE: 03-MAY-1995  
; APPLICATION DATA:  
; APPLICATION NUMBER: FR 94/05550  
; FILING DATE: 05-MAY-1994  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Weiser, Gerard J.  
; REGISTRATION NUMBER: 19,763  
; TELEPHONE: 215-875-8394  
; TELEFAX: 215-875-8394  
; REFERENCE/DOCKET NUMBER: 989.6411P  
; TELECOMMUNICATION INFORMATION:  
; INFORMATION FOR SEQ ID NO: 11:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 199 amino acids  
; TYPE: amino acid  
; STRANDEDNESS:  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
US-08-737-248-11

Query Match 67.2%; Score 796; DB 3; Length 199;  
Best Local Similarity 73.7%; Pred. No. 5.1e-74;  
Matches 146; Conservative 23; Mismatches 29; Indels 0; Gaps 0;

OY 30 PICPGGAAACVTLRLDFRAVVLSHYTHNLSSMFSEFDRYTHGRGFTIKAINSCHT 89  
Db 2 PVPCEGPNCCVSLRDLFRAVVMVSHYTHNLSSMFSEFDRYTHGRGFTIKAINSCHT 61  
OY 90 SLATPEDEKQAOQNHEDLNLVGLVRSWMDPLHLHYSEVQSIKEAPDTIL-KAVELE 149  
Db 62 SLATPEDEKQAOQNHEDLNLVGLVRSWMDPLHLHYSEVQSIKEAPDTIL-KAVELE 121  
OY 150 QTRKLLGEMELIVSQVHPETREKNEIYIPWVSGLPQLQMADESRISAYYNLLHCLRRDSHK 209  
Db 122 ENKRLLEGMEIIVGQVHPGAEIENELYPWVSGLPQLQMADESRISAYYNLLHCLRRDSHK 181  
OY 210 IDNYLKLKCRHNNNC 227

Db 182 IDTYLKLKCRHNNNC 199

## RESULT 9

US-08-737-248-6  
; Sequence 6, Application US/08737248  
; Patent No. 6114305  
; GENERAL INFORMATION:  
; APPLICANT: Guemene, Daniel  
; APPLICANT: Zadworny, David  
; APPLICANT: Karatzas, Costas  
; TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR  
; NUMBER OF SEQUENCES: 23  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: WEISER & ASSOCIATES  
; STREET: 230 South Fifteenth Street, Suite 500  
; CITY: Philadelphia  
; STATE: PA  
; COUNTRY: USA  
; ZIP: 19102  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patentin Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/737,248  
; FILING DATE: 28-APR-1997  
; CLASSIFICATION: 424  
; PRIOR APPLICATION NUMBER: PCT/FR95/00576  
; FILING DATE: 03-MAY-1995  
; APPLICATION DATA:  
; APPLICATION NUMBER: FR 94/05550  
; FILING DATE: 05-MAY-1994  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Weiser, Gerard J.  
; REGISTRATION NUMBER: 19,763  
; REFERENCE/DOCKET NUMBER: 989.6411P  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 215-875-8394  
; TELEFAX: 215-875-8394  
; INFORMATION FOR SEQ ID NO: 6:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 198 amino acids  
; TYPE: amino acid  
; STRANDEDNESS:  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
US-08-737-248-6

Query Match 66.4%; Score 786.5; DB 3; Length 198;  
Best Local Similarity 72.9%; Pred. No. 4.8e-73;  
Matches 145; Conservative 26; Mismatches 27; Indels 1; Gaps 1;

OY 29 LPICPGGAAACVTLRLDFRAVVLSHYTHNLSSMFSEFDRYTHGRGFTIKAINSCHT 88  
Db 1 LPVCPGSGVGCVSLENLDFRAVVKLSHYTHNLSSMFSEFDRYTHGRGFTIKAINSCHT 60  
OY 89 SLATPEDEKQAOQNHEDLNLVGLVRSWMDPLHLHYSEVQSIKEAPDTIL-KAVELE 148  
Db 61 SLATPEDEKQAOQNHEDLNLVGLVRSWMDPLHLHYSEVQSIKEAPDTIL-KAVELE 119  
OY 149 EOTKRLLEGMEIIVSQVHPETREKNEIYIPWVSGLPQLQMADESRISAYYNLLHCLRRDSHK 208  
Db 120 EODKRLLEGMEIIVGQVHPGAEIENELYPWVSGLPQLQMADESRISAYYNLLHCLRRDSHK 179  
OY 209 KIDNYLKLKCRHNNNC 227  
Db 180 KIDNYLKLKCRHNNNC 198

```
RESULT 10
US-08-737-248-2
; Sequence 2, Application US/08737248
; Patent No. 6114305
; GENERAL INFORMATION:
; APPLICANT: Guemene, Daniel
; APPLICANT: Zadmorny, David
; APPLICANT: Karatzas, Costas
; TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
; TITLE OF INVENTION: TREATING BIRD BROODINESS
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: WEISER & ASSOCIATES
; STREET: 230 South Fifteenth Street, Suite 500
; CITY: Philadelphia
; STATE: PA
; COUNTRY: USA
; ZIP: 19102
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/737,248
; FILING DATE: 28-APR-1997
; CLASSIFICATION: 424
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/FR95/00576
; FILING DATE: 03-MAY-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: FR 94/05550
; FILING DATE: 05-MAY-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Weiser, Gerard J.
; REGISTRATION NUMBER: 19,763
; REFERENCE/DOCKET NUMBER: 989,6411P
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 215-875-8383
; TELEFAX: 215-875-8394
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 199 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-737-248-2
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```
Query Match 63.6%; Score 754; DB 3; Length 199;
Best Local Similarity 68.8%; Pred. No. 1e-69;
Matches 137; Conservative 30; Mismatches 32; Indels 0; Gaps 0;

QY 29 LPICGGAARCOVTLRDLFRAVAVLSHYIHNLSEMFSEDFKRYTHGCGFTTKAINSCHT 88
DB 1 LPICSSGVNCQVSLGELFDRVAVLSHYIHNLSEMFSEDFKRYTHGCGFTTKAINSCHT 60
QY 89 SSLATPEDEKQAQOMNQDFSLVSLRSWNEPLVLYTEVRGMQEAPEALISKAVEIE 148
DB 61 SLLTPEDKEQTOQHHEBELNLILGLVRSWNPDLHLASEVQRTKEAPDTILMKAVEIE 120
QY 149 EOTRLLLEGMEILVSOVHPETKENEIYVWSGLPSLOMADEESRLSAVYNLLHCLRRDSH 208
DB 121 EONKRLLEGMEIKYIGRHSAGAGNEVFSQMDGLPSLQIADSDSRLEAFAYNLHCLRRDSH 180
QY 209 KIDNYLKLKLCRIIHNNC 227
DB 181 KIDNYLKLKLCRIIHNNC 199
```

RESULT 11

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US-08-737-248-4
; Sequence 4, Application US/08737248
; Patent No. 6114305
; GENERAL INFORMATION:
; APPLICANT: Guemene, Daniel
; APPLICANT: Zadmorny, David
; APPLICANT: Karatzas, Costas
; TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
; TITLE OF INVENTION: TREATING BIRD BROODINESS
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: WEISER & ASSOCIATES
; STREET: 230 South Fifteenth Street, Suite 500
; CITY: Philadelphia
; STATE: PA
; COUNTRY: USA
; ZIP: 19102
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/737,248
; FILING DATE: 28-APR-1997
; CLASSIFICATION: 424
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/FR95/00576
; FILING DATE: 03-MAY-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: FR 94/05550
; FILING DATE: 05-MAY-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Weiser, Gerard J.
; REGISTRATION NUMBER: 19,763
; REFERENCE/DOCKET NUMBER: 989,6411P
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 215-875-8383
; TELEFAX: 215-875-8394
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 426 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-737-248-4
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```
Query Match 63.6%; Score 754; DB 3; Length 426;
Best Local Similarity 68.8%; Pred. No. 3.1e-69;
Matches 137; Conservative 30; Mismatches 32; Indels 0; Gaps 0;

QY 29 LPICGGAARCOVTLRDLFRAVAVLSHYIHNLSEMFSEDFKRYTHGCGFTTKAINSCHT 88
DB 228 LPICSSGVNCQVSLGELFDRVAVLSHYIHNLSEMFSEDFKRYTHGCGFTTKAINSCHT 287
QY 89 SSLATPEDEKQAQOMNQDFSLVSLRSWNEPLVLYTEVRGMQEAPEALISKAVEIE 148
DB 288 SLLTPEDKEQTOQHHEBELNLILGLVRSWNPDLHLASEVQRTKEAPDTILMKAVEIE 347
QY 149 EOTRLLLEGMEILVSOVHPETKENEIYVWSGLPSLOMADEESRLSAVYNLLHCLRRDSH 208
DB 348 EONKRLLEGMEIKYIGRHSAGAGNEVFSQMDGLPSLQIADSDSRLEAFAYNLHCLRRDSH 407
QY 209 KIDNYLKLKLCRIIHNNC 227
DB 408 KIDNYLKLKLCRIIHNNC 426
```

RESULT 12  
US-08-737-248-5  
; Sequence 5, Application US/08737248  
; Patent No. 6114305



```

: TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
: TITLE OF INVENTION: TREATING BIRD BROODINESS
: NUMBER OF SEQUENCES: 23
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: WEISER & ASSOCIATES
: STREET: 230 South Fifteenth Street, Suite 500
: CITY: Philadelphia
: STATE: PA
: COUNTRY: USA
: ZIP: 19102
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: Patentln Release #1.0, Version #1.30
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/08/737,248
: FILING DATE: 28-APR-1997
: CLASSIFICATION: 424
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: PCT/FR95/00576
: FILING DATE: 03-MAY-1995
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: FR 94/05550
: FILING DATE: 05-MAY-1994
: ATTORNEY/AGENT INFORMATION:
: NAME: Weiser, Gerard J.
: REGISTRATION NUMBER: 19,763
: REFERENCE/DOCKET NUMBER: 989.6411P
: TELECOMMUNICATION INFORMATION:
: TELEPHONE: 215-875-8394
: TELEFAX: 215-875-8383
: INFORMATION FOR SEQ ID NO: 15:
: SEQUENCE CHARACTERISTICS:
: LENGTH: 197 amino acids
: TYPE: amino acid
: STRANDEDNESS:
: TOPOLOGY: linear
: MOLECULE TYPE: protein
: US-08-737-248-15

Query Match          56.3%; Score 667; DB 3; Length 197;
Best Local Similarity 62.8%; Pred. No. 8.7e-61;
Matches 123; Conservative 31; Mismatches 41; Indels 2; Gaps 1;
QY 29 LPIPGGAARCOVTLRDLFDRAVYLSHYIHNLSSEMFSEFDKRYTHGSGFTTKAINSCHT 88
DB 1 LPIVSGG--DCQTPLELFDRAVYVLSHIHTLTDMTEFEDKQYVODREFLAKAINDCPT 58
QY 89 SLATPEDEKQAQOMKQDFLSILSVISLRSNNEPLVHLVTEVRGMOEAPAILSKAVEIE 148
DB 59 SSLATPEDEKQAQKVPPEVLLNLTLISLVHSWNPDLFQITGLGSIHEAPDAIISRAKEIE 118
QY 149 EQTRLLGEMLIYSQVHPETKENEIYVWSGPLQMADEESRLSAYYNLHLCIRDSH 208
DB 119 EQNRRLLEGKIKITISQAVPEAKNEIYLVWSQPLSGVDESKDLAFYNNIRCLRDSH 178
QY 209 KIDNYLKLKCRILHNKNC 227
DB 179 KVDNYLKLKRCQIVHKNNC 197

RESULT 15
US-08-737-248-17
: Sequence 17, Application US/08737248
: Patent No. 6114305
: GENERAL INFORMATION:
: APPLICANT: Guemene, Daniel
: APPLICANT: Zadworny, David
: APPLICANT: Karatzas, Costas
: TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
: TREATING BIRD BROODINESS

```

```

: NUMBER OF SEQUENCES: 23
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: WEISER & ASSOCIATES
: STREET: 230 South Fifteenth Street, Suite 500
: CITY: Philadelphia
: STATE: PA
: COUNTRY: USA
: ZIP: 19102
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: Patentln Release #1.0, Version #1.30
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/08/737,248
: FILING DATE: 28-APR-1997
: CLASSIFICATION: 424
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: PCT/FR95/00576
: FILING DATE: 03-MAY-1995
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: FR 94/05550
: FILING DATE: 05-MAY-1994
: ATTORNEY/AGENT INFORMATION:
: NAME: Weiser, Gerard J.
: REGISTRATION NUMBER: 19,763
: REFERENCE/DOCKET NUMBER: 989.6411P
: TELECOMMUNICATION INFORMATION:
: TELEPHONE: 215-875-8394
: TELEFAX: 215-875-8383
: INFORMATION FOR SEQ ID NO: 17:
: SEQUENCE CHARACTERISTICS:
: LENGTH: 197 amino acids
: TYPE: amino acid
: STRANDEDNESS:
: TOPOLOGY: linear
: MOLECULE TYPE: protein
: US-08-737-248-17

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Query Match          56.3%; Score 667; DB 3; Length 197;
Best Local Similarity 63.6%; Pred. No. 8.7e-61;
Matches 126; Conservative 28; Mismatches 42; Indels 2; Gaps 2;
QY 30 PICGGAARCOVTLRDLFDRAVYLSHYIHNLSSEMFSEFDKRYTHGSGFTTKAINSCHT 89
DB 2 PICONGGTNCOIPISALFDRAVYKLSHIHLSSEMFSEFDERFTGRRFLAKSGISCHTS 61
QY 90 SLATPEDEKQAQOMKQDFLSILSVISLRSNNEPLVHLVTEVRGMOEAPAILSKAVEIEE 149
DB 62 SLATPEDEKE--AQIQHEDLNLVLKVLRSWNPDLVHVSEVQDIIEAPDIIIMKTVEVEE 120
QY 150 QTRKLLGEMLIYSQVHPETKENEIYVWSGPLQMADEESRLSAYYNLHLCIRDSH 209
DB 121 QTRKLLGEMERIIIGRIQPGLENEIYSPWPB--PASIPDENSRLFAFYNLHLCIRDSH 179
QY 210 IDNYLKLKCRILHNKNC 227
DB 180 IDNYLKLKCRILHKGNC 197

```

Search completed: April 25, 2002, 11:06:24  
Job time: 149 sec

GenCore version 4.5  
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: April 25, 2002, 11:03:55 ; Search time 23.29 Seconds

(without alignments)  
721.968 Million cell updates/sec

Title: US-09-815-306-1

Perfect score: 1185  
Sequence: 1 NAIKSSPMKGSLLLLVSNL.....HKIDNYLKLCKRIHNNNC 227

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 522463 seqs, 74073290 residues

Total number of hits satisfying chosen parameters: 522463

Minimum DB seq length: 0  
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%  
Maximum Match 100%

Listing first 45 summaries

Database :

1: /SID58/gcgdata/geneseq/geneseq/AA1980.DAT:\*  
2: /SID58/gcgdata/geneseq/geneseq/AA1981.DAT:\*  
3: /SID58/gcgdata/geneseq/geneseq/AA1982.DAT:\*  
4: /SID58/gcgdata/geneseq/geneseq/AA1983.DAT:\*  
5: /SID58/gcgdata/geneseq/geneseq/AA1984.DAT:\*  
6: /SID58/gcgdata/geneseq/geneseq/AA1985.DAT:\*  
7: /SID58/gcgdata/geneseq/geneseq/AA1986.DAT:\*  
8: /SID58/gcgdata/geneseq/geneseq/AA1987.DAT:\*  
9: /SID58/gcgdata/geneseq/geneseq/AA1988.DAT:\*  
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12: /SID58/gcgdata/geneseq/geneseq/AA1991.DAT:\*  
13: /SID58/gcgdata/geneseq/geneseq/AA1992.DAT:\*  
14: /SID58/gcgdata/geneseq/geneseq/AA1993.DAT:\*  
15: /SID58/gcgdata/geneseq/geneseq/AA1994.DAT:\*  
16: /SID58/gcgdata/geneseq/geneseq/AA1995.DAT:\*  
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18: /SID58/gcgdata/geneseq/geneseq/AA1997.DAT:\*  
19: /SID58/gcgdata/geneseq/geneseq/AA1998.DAT:\*  
20: /SID58/gcgdata/geneseq/geneseq/AA1999.DAT:\*  
21: /SID58/gcgdata/geneseq/geneseq/AA2000.DAT:\*  
22: /SID58/gcgdata/geneseq/geneseq/AA2001.DAT:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	1185	100.0	227	AA05231	AA sequence of hum
2	1181	99.7	228	AAW23620	Proactin antagoni
3	1181	99.7	228	AAW23626	Proactin antagoni
4	1176	99.2	227	AAW2079	Human preproactin
5	1043	88.0	199	AAW31764	Human proactin.
6	1043	88.0	200	AAW92258	Human anti-angioge
7	1043	88.0	351	AAW8691	Proactin. Homo s
8	1038	87.6	199	AAW78428	Human proactin am
9	1036	87.4	359	AAW5805	DHFR-proactin fus
10	1022	86.2	199	AAW23629	Human proactin (Se
11	783	66.1	229	AAW5699	Preproactin from

12	754	63.6	199	16	AAW87090	Turkey proactin.
13	754	63.6	426	16	AAW87091	Turkey proactin/G
14	729.5	61.6	226	12	AAW45599	Rat proactin. Ra
15	729	61.5	225	9	AAW82078	Recombinant rat pr
16	705	59.5	140	20	AAW92260	Human anti-angioge
17	705	59.5	143	20	AAW92261	Human anti-angioge
18	703.5	59.4	226	12	AAW13757	Proactin. Mus mu
19	689.5	58.2	184	8	AAW70504	Cattle recombinant
20	657	55.4	198	13	AAW22494	Rat proactin. Ra
21	642	54.2	193	18	AAW23619	Proactin antagoni
22	641	54.1	125	19	AAW40299	Human proactin an
23	641	54.1	252	19	AAW40300	Human concatameris
24	630	53.2	125	20	AAW06194	Anti-angiogenic pr
25	630	53.2	253	20	AAW06195	Anti-angiogenic pr
26	626	52.8	124	20	AAW92259	Human anti-angioge
27	442	37.3	216	10	AAW94626	Sequence of bovine
28	433	36.5	198	11	AAW06643	Mammalian growth ho
29	410.5	34.6	243	20	AAW08018	Mouse PA-I protein
30	356	30.0	224	7	AAW60511	Mammalian prolifere
31	328.5	27.7	204	16	AAW59481	Proactin peptide
32	314	26.5	211	22	AAW81246	Human APP protein
33	294	24.8	253	20	AAW08016	Human APP protein
34	276.5	23.3	200	11	AAW06914	Tilapia proactin
35	276	23.3	211	13	AAW27501	Proactin from pit
36	272	23.0	212	11	AAW06893	Tilapia proactin
37	267	22.5	212	11	AAW08121	Modified tilapia p
38	263	22.2	236	22	AAW61576	Murine proactin-1
39	245	20.7	223	22	AAW61577	Murine proactin-1
40	222.5	18.8	216	5	AAW40214	Sequence encoded b
41	219.5	18.5	216	5	AAW40215	Sequence of turkey
42	217.5	18.4	232	12	AAW3583	Growth hormone-1lk
43	212.5	17.9	217	9	AAW80974	Sequence of human
44	206	17.4	192	21	AAW03153	Chicken growth hor
45	205.5	17.3	217	8	AAW71058	Sequence of human

# ALIGNMENTS

RESULT 1	
ID	AAW05231 standard; protein: 227 AA.
XX	
AC	AAW05231;
XX	
DT	03-AUG-1990 (first entry)
XX	
DE	AA sequence of human proactin (HP) as encoded by recombinant DNA.
XX	
KW	Human proactin (HP); plasmid pTP100; plasmid pDR720;
KW	Plasmid pTP100.
XX	
OS	Homo sapiens.
XX	
PN	JP02000445-A.
XX	
PD	05-JAN-1990.
XX	
PF	25-DEC-1987; 87JP-0331244.
XX	
PR	25-DEC-1987; 87JP-0331244, JP-315317.
XX	
PA	(SHIK-) SHIKISHIMA BOSEKI K.
XX	
DR	WPI: 1990-047987/07.
XX	
DR	N-PSDB; AAQ93293.
XX	
PT	Human proactin producing recombinant DNA
PT	in which promoter, Shine-Dalgarno sequence and translation
PS	initiation codon are integrated
XX	
PS	Disclosure: Fig 1; 15pp: Japanese.
XX	

CC Also new are bacteria (E. coli) expressing it which contain its encoding  
 CC DNA, and the prodn. of it by their culture. Large ams. of it can be  
 CC produced recombinantly.  
 XX  
 SQ Sequence 227 AA:

Query Match 100.0%; Score 1185; DB 11; Length 227;  
 Best Local Similarity 100.0%; Pred. No. 6.7e-106;  
 Matches 227; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MNIKSPWKGSLLLLVSNLLCQSVAPLPICPGGAARCOVTLRDLFRAVAVLSHYINL 60  
 DB 1 mnikgspwkgsl1lllvsnlllcqsvaplpicpggaarcqvltlrdfravavlshylnl 60  
 OY 61 SSEMSEFDKRYTHGRGFTTKAINSCHTSSLATPEDKEQAOQMNKDFSLVSLRSWN 120  
 DB 61 ssemfsefdkrythgrgfttkainschtslapedkeqagmqndfslslvslrsw 120  
 OY 121 EPLVHLVTEVRGMQAPPAILSKAVEIEBQTRRLLEGMEILYSQVHPETKENEIYPWMSG 180  
 DB 121 eplvhlvtevrqmqapeailskaveieeqtkrllegmellvsgvhpelkenelypwsg 180  
 OY 181 LPSLQMADEESRLSAVYNLLHCLRRDSHKIDVYKLKLCRIITHNNC 227  
 DB 181 lpslqmadeesrlsayynllhclrrdshkldnyklklcrilthnnnc 227  
 SQ

## RESULT 2

AAW23620  
 ID AAW23620 standard; Protein: 228 AA.

AC AAW23620;  
 DT 11-FEB-1998 (first entry)  
 XX

DE Prolactin antagonist (substituted human prolactin).

KW Prolactin antagonist; phosphorylation; hyperprolactinaemia;  
 KW prolactinoma; prostate cancer; tumour; T-lymphoma; infertility;  
 KW lactation; miscarriage; ovulation; antibody; therapy; human.  
 XX

OS Homo sapiens.  
 OS Synthetic.  
 XX

FH Key Location/Qualifiers

FT MISC-difference 43 /note= "encoded by ASS"  
 FT MISC-difference 63 /note= "encoded by TGA"  
 FT MISC-difference 74 /note= "encoded by ASS"  
 FT MISC-difference 94 /note= "encoded by ASS"  
 FT MISC-difference 152 /note= "encoded by ASS"  
 FT MISC-difference 170 /note= "encoded by ASS"  
 FT MISC-difference 208 /note= "encoded by ASS"  
 FT /label= Asp, Glu, Asn, Tyr, Gln, Ala, Trp, His

PN W09727865-A1.

PD 07-AUG-1997.

PE 30-JAN-1997; 97WO-US01435.

PR 31-JAN-1996; 96US-0594809.

PA (REGC ) UNIV CALIFORNIA.

PI Walker AM;  
 XX

DR WPI: 1997-402308/37.  
 DR N-PsDB: AAT74333.

PT Substituted prolactin peptide(s) and proteins having an amino acid  
 PT substitution for serine in the C-terminal - useful as prolactin  
 PT antagonists, e.g. for treating prolactin dependent cancers

PS Example 13; Fig 18; 158pp; English.

CC This protein comprises human prolactin, substituted at residue 208  
 CC (Ser-179 in the native sequence). It can be expressed in bacterial  
 CC or eukaryotic host cells using a claimed cDNA sequence (see  
 CC AAT74333). Claimed prolactin antagonists (see AAW23608-18) comprise  
 CC prolactin substitution mutant proteins and C-terminal peptides in  
 CC which the serine residue at position 179 (human) or 177 (rat) is  
 CC substituted by another amino acid. They can be used for the  
 CC treatment of prolactin dependent cancers and can inhibit T-lymphoma  
 CC cell proliferation. They are also useful for treatment of  
 CC prolactinoma, infertility related to abnormal prolactin regulation,  
 CC some forms of prostatic cancer, miscarriage and ovulation  
 CC irregularities, as well as in assays to measure levels of non-  
 CC phosphorylated and phosphorylated prolactin as an indicator of  
 CC reproductive pathologies and presence or status of a prolactin-  
 CC dependent tumour, and to raise polyclonal and monoclonal antibodies.

SQ Sequence 228 AA:

Query Match 99.7%; Score 1181; DB 18; Length 228;  
 Best Local Similarity 99.6%; Pred. No. 1.6e-105;  
 Matches 226; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 1 MNIKSPWKGSLLLLVSNLLCQSVAPLPICPGGAARCOVTLRDLFRAVAVLSHYINL 60  
 DB 2 mnikgspwkgsl1lllvsnlllcqsvaplpicpggaarcqvltlrdfravavlshylnl 61  
 OY 61 SSEMSEFDKRYTHGRGFTTKAINSCHTSSLATPEDKEQAOQMNKDFSLVSLRSWN 120  
 DB 62 ssemfsefdkrythgrgfttkainschtslapedkeqagmqndfslslvslrsw 121  
 OY 121 EPLVHLVTEVRGMQAPPAILSKAVEIEBQTRRLLEGMEILYSQVHPETKENEIYPWMSG 180  
 DB 122 eplvhlvtevrqmqapeailskaveieeqtkrllegmellvsgvhpelkenelypwsg 181  
 OY 181 LPSLQMADEESRLSAVYNLLHCLRRDSHKIDVYKLKLCRIITHNNC 227  
 DB 182 lpslqmadeesrlsayynllhclrrdshkldnyklklcrilthnnnc 228  
 SQ

## RESULT 3

AAW23626  
 ID AAW23626 standard; Protein: 228 AA.

AC AAW23626;  
 DT 11-FEB-1998 (first entry)  
 XX

DE Prolactin antagonist (substituted human prolactin).

KW Prolactin antagonist; phosphorylation; hyperprolactinaemia;  
 KW prolactinoma; prostate cancer; tumour; T-lymphoma; infertility;  
 KW lactation; miscarriage; ovulation; antibody; therapy; human.  
 XX

OS Homo sapiens.  
 OS Synthetic.  
 XX

FH Key Location/Qualifiers

FT MISC-difference 208 /note= "variable site"

PN W09727865-A1.

PD 07-AUG-1997.



XX 30-JAN-1997; 97WO-US01435.  
 PF 31-JAN-1996; 96US-0594809.  
 PR  
 XX (REGC ) UNIV CALIFORNIA.  
 PA Walker AM;  
 PI WPI: 1997-402308/37.  
 DR  
 XX Substituted prolactin peptide(s) and proteins having an amino acid  
 PT substitution for serine in the C-terminal - useful as prolactin  
 XX antagonists, e.g. for treating prolactin dependent cancers  
 PS Example 9; Page 102; 158pp; English.  
 XX  
 CC This protein comprises human prolactin, substituted at residue 208  
 CC (Ser-179 in the native sequence). It has prolactin antagonist  
 CC activity, antagonizing the stimulation of T lymphoma cell growth in  
 CC the presence of non-phosphorylated prolactin. Claimed prolactin  
 CC antagonists (see AAM23607-18) comprise prolactin substitution mutant  
 CC proteins and C-terminal peptides. The Antagonists can be used for  
 CC the treatment of proliferation dependent cancers and can inhibit  
 CC T-lymphoma cell proliferation. They are also useful for treatment  
 CC of prolactinoma, infertility related to abnormal prolactin  
 CC regulation, some forms of prostatic cancer, miscarriage and  
 CC ovulation irregularities, as well as in assays to measure levels of  
 CC non-phosphorylated and phosphorylated prolactin as an indicator of  
 CC reproductive pathologies and presence or status of a prolactin  
 CC dependent tumour, and to raise polyclonal and monoclonal antibodies.  
 XX  
 SQ Sequence 228 AA:  
 Query Match 99.7%; Score 1181; DB 18; Length 228;  
 Best Local Similarity 99.6%; Pred. No. 1.6e-105;  
 Matches 226; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
 QY 1 MNKGSPWKGSLLLLVSNLLCOSVAPLPICPGGARCOVTLRDLPDRAVLSHYIHL 60  
 DB 2 mnlkgspwkslllllvsnlllcgsvaplpicpggaarqvtlrdldravvshyihl 61  
 QY 61 SSMFSEFDKRYTHRGFTFKRAINSCHTSSLPAPDEKQAQOMKDFLSIYLSLRSWN 120  
 DB 62 ssemfsefdkrythrgftfkrainschtslapekedeqgmqkdfllslvslrsw 121  
 QY 121 EPIYHLVTEVRGMOEAPALISKAVEIEEOTKRLLEGMEILVSOVHETKENETYPWMSG 180  
 DB 122 epiylhlvtevrqmeapealiskaveleqtkrllegmelivsqvhpctkenelypwsq 181  
 QY 181 LPSIQMADEESRLSAVYNLLHCLRRDSHKIDNYLKLKCRTHNNNC 227  
 DB 182 lpslqmadeesrlsayynllhcltrdshkldnyklklkcrthnnnc 228  
 RESULT 4  
 AAB82079  
 ID AAB82079 standard; protein; 227 AA.  
 AC AAB82079;  
 XX  
 DT 18-OCT-1990 (first entry)  
 XX  
 DE Human preprolactin gene.  
 KM Prolactin; milk; contraceptive; dairy cows; lactation.  
 XX  
 XX Homo sapiens.  
 OS  
 XX Key Location/Qualifiers  
 FT 1..227  
 FT Protein /label=preprolactin

FT Protein 29..227  
 FT /label=prolactin  
 XX  
 PN US4725549-A.  
 XX  
 PD 16-FEB-1988.  
 XX  
 PF 23-MAR-1984; 84US-0592714.  
 XX  
 PR 22-SEP-1980; 80US-0189160.  
 PR 23-MAR-1984; 84US-0592714.  
 PA (REGC ) UNIVERSITY OF CALIFORNIA.  
 PI Cooke NE, Baxter JD;  
 XX WPI: 1988-070922/10.  
 DR N-PSDB; AAN80115.  
 XX  
 PT DNA coding for prolactin - obtd. by prepn. of reverse transcript  
 XX of mRNA coding for prolactin and inserting into a transfer vector.  
 PS Disclosure; ; P: English.  
 XX  
 CC The cDNA encoding the prolactin can be inserted into expression vectors  
 CC for the prodn. of prolactin which can be admin. to dairy cows to  
 CC increase milk yield. The protein can also be used as a female  
 CC contraceptive and to ensure adequate milk prodn. for breast feeding  
 CC mothers. See also AAB82078.  
 XX  
 SQ Sequence 227 AA:  
 Query Match 99.2%; Score 1176; DB 9; Length 227;  
 Best Local Similarity 99.1%; Pred. No. 4.9e-105;  
 Matches 225; Conservative 1; Mismatches 1; Indels 0; Gaps 0;  
 QY 1 MNKGSPWKGSLLLLVSNLLCOSVAPLPICPGGARCOVTLRDLPDRAVLSHYIHL 60  
 DB 1 mnlkgspwkslllllvsnlllcgsvaplpicpggaarqvtlrdldravvshyihl 60  
 QY 61 SSMFSEFDKRYTHRGFTFKRAINSCHTSSLPAPDEKQAQOMKDFLSIYLSLRSWN 120  
 DB 61 ssemfsefdkrythrgftfkrainschtslapekedeqgmqkdfllslvslrsw 120  
 QY 121 EPIYHLVTEVRGMOEAPALISKAVEIEEOTKRLLEGMEILVSOVHETKENETYPWMSG 180  
 DB 121 epiylhlvtevrqmeapealiskaveleqtkrllegmelivsqvhpctkenelypwsq 180  
 QY 181 LPSIQMADEESRLSAVYNLLHCLRRDSHKIDNYLKLKCRTHNNNC 227  
 DB 181 lpslqmadeesrlsayynllhcltrdshkldnyklklkcrthnnnc 227  
 RESULT 5  
 AAY31764  
 ID AAY31764 standard; Protein; 199 AA.  
 AC AAY31764;  
 XX  
 DT 06-DEC-1999 (first entry)  
 XX  
 DE Human prolactin.  
 XX  
 KM Prolactin; human; variant; protein engineering.  
 XX  
 XX Homo sapiens.  
 OS  
 XX Key Location/Qualifiers  
 FT Misc-difference 59  
 FT /note="optionally substituted by phe in human  
 FT Misc-difference 60 prolactin variant of Claim 8"

```

FT /note- "optionally substituted by Ser in human
FT proactin variant of Claim 8"
FT Misc-difference 61 /note- "optionally substituted by Glu in human
FT proactin variant of Claim 8"
FT Misc-difference 63 /note- "optionally substituted by Ile in human
FT proactin variant of Claim 8"
FT Misc-difference 64 /note- "optionally substituted by Pro in human
FT proactin variant of Claim 8"
FT Misc-difference 67 /note- "optionally substituted by Ser in human
FT proactin variant of Claim 8"
FT Misc-difference 68 /note- "optionally substituted by Asn in human
FT proactin variant of Claim 8"
FT Misc-difference 69 /note- "optionally substituted by Arg in human
FT proactin variant of Claim 8"
FT Misc-difference 71 /note- "optionally substituted by Glu in human
FT proactin variant of Claim 8"
FT Misc-difference 72 /note- "optionally substituted by Thr in human
FT proactin variant of Claim 8"
FT Misc-difference 75 /note- "optionally substituted by Lys in human
FT proactin variant of Claim 8"
FT Misc-difference 76 /note- "optionally substituted by Ser in human
FT proactin variant of Claim 8"
FT Misc-difference 77 /note- "optionally substituted by Asn in human
FT proactin variant of Claim 8"
FT Misc-difference 78 /note- "optionally substituted by Lys in human
FT proactin variant of Claim 8"
FT Misc-difference 79 /note- "optionally substituted by Glu in human
FT proactin variant of Claim 8"
FT Misc-difference 180 /note- "optionally substituted by Asp in human
FT proactin variant of Claim 8"
FT Misc-difference 184 /note- "optionally substituted by Thr in human
FT proactin variant of Claim 8"
FT Misc-difference 185 /note- "optionally substituted by Phe in human
FT proactin variant of Claim 8"
FT Misc-difference 187 /note- "optionally substituted by Arg in human
FT proactin variant of Claim 8"
FT US9595346-A.
FT 21-SEP-1999.
FT 07-JUN-1995: 9505-0476999.
FT 02-FEB-1994: 9405-0190723.
FT 26-OCT-1989: 8905-0428066.
FT 27-APR-1992: 9205-0875204.
FT 13-OCT-1992: 9205-0960227.
FT 28-OCT-1988: 8805-0264611.
FT (GETH ) GENENTECH INC.
FT Cunningham BC, Wells JA;
FT WPI, 1999-560495/47.
FT Isolated nucleic acids encoding variants of human proactin and

```

```

PT placental lactogen useful for identifying active domains within those
PT proteins -
PS Claim 7; Fig 2; 86pp: English.
XX
XX This is the amino acid sequence of human proactin. The invention
CC provides a method for the systematic analysis of the structure and
CC function of polypeptides by identifying active domains which
CC influence the activity of the polypeptide with a target substance,
CC and a method for identifying the active amino acid residues within
CC the active domain of a polypeptide. It also provides polypeptide
CC variants comprising segment-substituted and residue-substituted
CC growth hormones, proactin and placental lactogens. Claimed
CC variants of human proactin have 1-19 amino acid substitutions
CC when compared to the wild-type sequence, selected from H59F, T60S,
CC S61E, L63I, A64P, E67S, D68N, K69R, Q71E, A72T, M75K, N76S, Q77N,
CC K78L, D79E, H180D, N184T, Y185F and K185R. These mutations
CC inactivate the active domains and binding sites of the protein.
CC Identifying receptor binding sites in hormones permits the rational
CC design of receptor specific variants. Nucleic acids encoding the
CC variants, expression vectors and host cells are also claimed.
CC
SQ Sequence 199 AA;
Query Match 88.0%; Score 1043; DB 20; Length 199;
Best Local Similarity 100.0%; Pred. No. 2.5e-92;
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 29 LPIPGGAARCVTLRDLDFRAVYLSHYIHNLSSEMFSEFDRYTHGCFITKAINSGCT 88
DB 1 IPIPGGAARCVTLRDLDFRAVYLSHYIHNLSSEMFSEFDRYTHGCFITKAINSGCT 60
QY 89 SSLATPEKREAOQNMKNKDFSLVSTRSWNEPLVHYTVRKMOKAPKALISKAVIE 148
DB 61 SLATPEKREAOQNMKNKDFSLVSTRSWNEPLVHYTVRKMOKAPKALISKAVIE 120
QY 149 EOTRRLLEGMEILVSOVHPETKENEIYPVWSGLPSLQMADEESRLSAVYNLHCLRPDSH 208
DB 121 eqtkrllegmellvsqyhpckeneiypwsglpslqmadeesrlsavnllhclrrdsh 180
QY 209 KIDNYLKLKCRITTHNNNC 227
DB 181 KIDNYLKLKCRITTHNNNC 199
RESULT 6
ID AAM92258 standard; Protein: 200 AA.
AC AAM92258;
XX
DT 08-JUN-1999 (first entry)
XX
DE Human anti-angiogenic peptide hPRL Met-1Cys199.
XX
XX Human: anti-angiogenic; placental lactogen; hPL; angiogenesis;
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
KW placental vascularisation; pregnancy; treatment; angiogenic disease;
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
KW granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
KW gene therapy; pre-eclampsia; intrauterine growth retardation;
KW placental dysfunction.
XX
XX Homo sapiens.
OS
XX
XX MO9851323-A1.
XX
XX 19-NOV-1998.

```



KW Human growth hormone; hGH; prolactin; placental lactogen;  
 KW modification; mutagenesis.  
 OS Homo sapiens.  
 XX US6013478-A.  
 XX 11-JAN-2000.  
 PD 24-JUN-1998; 98US-0104036.  
 XX 26-OCT-1989; 89US-0428066.  
 PR 27-APR-1992; 92US-0875204.  
 PR 13-OCT-1992; 92US-0960227.  
 PR 02-FEB-1994; 94US-0190723.  
 PR 06-JUN-1995; 95US-0483039.  
 PR 30-JUN-1997; 97US-0903398.  
 PR 28-OCT-1988; 88US-0264611.  
 XX (GETH ) GENENTECH INC.  
 PA Wells JA, Cunningham BC;  
 PI WPI; 2000-159873/14.  
 DR Recombinant production of variant polypeptides, e.g. growth hormone  
 XX variants with altered receptor specificity, using cells transformed  
 PT with DNA selected by scanning mutagenesis in at least one peptide  
 PT domain  
 XX  
 PS Example 2; Fig 2; 83pp; English.  
 XX  
 CC The present invention describes the production of a polypeptide variant  
 CC (1) comprising segment substituted and residue substituted growth  
 CC hormone, prolactin or placental lactogens. The method is particularly  
 CC used to produce variants of growth hormone (GH), prolactin or placental  
 CC lactogen, but may also be applied to receptors, interferons, and  
 CC colony-stimulating factors. A particular application is the production  
 CC of human GH variants with altered (decreased or increased) binding  
 CC interaction with the somatogenic receptor, i.e. compounds useful as  
 CC human GH (ant)agonists and which may have higher potency for stimulating  
 CC other human GH receptors, and as standards or tracers in immunoassays  
 CC for human GH. This method of DNA selection identifies the biologically  
 CC active residues in active domains, including those critical for  
 CC interaction with different targets. The present sequence represents a  
 CC human prolactin amino acid sequence, which is used in the  
 CC exemplification of the present invention.  
 CC  
 XX Sequence 199, AA;  
 XX SQ

Query Match 87.6%; Score 1038; DB 21; Length 199;  
 Best Local Similarity 99.5%; Pred. No. 7,4e-92;  
 Matches 199; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 29 LPTPGGAARQCVTLRDLFRAVYLSHYINLSSEMFSEDFKRYTHRGFTTAKNSCHT 88  
 DB 1 lptpggaarqcvtlrlfdravylshylnlssmfsefdkrythrgfttkainscht 60  
 QY 89 SSLATPEDKQAQOMNKDFSLIVSLRSMNEPLVHLYEVKGMQAPPAIISKAVEIE 148  
 DB 61 sslatpedkdaqomnkdfslivslrsmneplvhlvtevgmgqapailiskaveie 120  
 QY 149 EQTKRLLEGMEELIVSOVHPETKENEIYPVWSGLPSLOMADEESRLSAVYNLHCLRRDSH 208  
 DB 121 eqtkrllegmelivsovhpetkenelypwsglpslqmadeesrlsavylnllclrrdsh 180  
 QY 209 KIDNYLKLKCRITHHNNC 227  
 DB 181 kidnylklkcrilhhnnc 199

RESULT 9

AA05805  
 ID AAR05805 standard; protein; 359 AA.  
 XX  
 AC AAR05805;  
 XX  
 DT 13-NOV-1990 (first entry)  
 XX  
 DE DHFR-prolactin fusion gene encoded by plasmid pPRLH4.  
 XX  
 KW Plasmid pPRLH4; trimethoprim; ampicillin; DHFR; prolactin;  
 KW dithydrofolate reductase; ds.  
 XX  
 OS Synthetic.  
 XX  
 PN JP02142479-A.  
 XX  
 PD 31-MAY-1990.  
 XX  
 PF 24-NOV-1988; 88JP-0296913.  
 XX  
 PR 24-NOV-1988; 88JP-0296913.  
 XX  
 PA (AGEN ) AGENCY OF IND SCI TECH.  
 XX  
 DR WPI; 1990-213062/28.  
 XX  
 DR N-PSDB; AAQ05168.  
 XX  
 PT New recombinant plasmid pPRLH4 - can be replicated in escherichia  
 PT coli and can give trimethoprim and ampicillin resistance to host.  
 XX  
 PS Disclosure; ; P; Japanese.  
 XX  
 CC Plasmid may be used to transform E.coli to express DHFR-prolactin  
 CC fusion protein.  
 CC  
 XX Sequence 359 AA;  
 XX SQ

Query Match 87.4%; Score 1036; DB 11; Length 359;  
 Best Local Similarity 99.5%; Pred. No. 2,5e-91;  
 Matches 199; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 29 LPTPGGAARQCVTLRDLFRAVYLSHYINLSSEMFSEDFKRYTHRGFTTAKNSCHT 88  
 DB 161 lptpggaarqcvtlrlfdravylshylnlssmfsefdkrythrgfttkainscht 220  
 QY 89 SSLATPEDKQAQOMNKDFSLIVSLRSMNEPLVHLYEVKGMQAPPAIISKAVEIE 148  
 DB 221 sslatpedkdaqomnkdfslivslrsmneplvhlvtevgmgqapailiskaveie 280  
 QY 149 EQTKRLLEGMEELIVSOVHPETKENEIYPVWSGLPSLOMADEESRLSAVYNLHCLRRDSH 208  
 DB 281 eqtkrllegmelivsovhpetkenelypwsglpslqmadeesrlsavylnllclrrdsh 340  
 QY 209 KIDNYLKLKCRITHHNNC 227  
 DB 341 kidnylklkcrilhhnnc 359

RESULT 10  
 AAM23629  
 ID AAM23629 standard; Protein; 199 AA.  
 XX  
 AC AAM23629;  
 XX  
 DT 11-FEB-1998 (first entry)  
 XX  
 DE Human proactin (Ser-179 substituted).  
 XX  
 KW Prolactin antagonist; phosphorylation; hyperprolactinaemia;  
 KW prolactinoma; prostate cancer; tumour; T-lymphoma; infertility;  
 KW lactation; miscarriage; ovulation; antibody; therapy; human.  
 XX

```

OS Homo sapiens.
XX Synthetic.
XX Key Location/Qualifiers
FH MISC-difference 179
FT /note= "variable site"
XX
XX MO9727865-A1.
XX
XX 07-AUG-1997.
XX
XX 30-JAN-1997; 97MO-US01435.
XX
XX 31-JAN-1996; 96US-0594809.
XX
XX (REGC ) UNIV CALIFORNIA.
XX
XX Walker AM;
XX
XX WPI; 1997-402308/37.
XX
XX Substituted prolactin peptide(s) and proteins having an amino acid
XX substitution for serine in the C-terminal - useful as prolactin
XX antagonists, e.g. for treating prolactin dependent cancers
XX
XX Disclosure; Page 106-107; 158pp; English.
XX
XX This protein comprises human prolactin, substituted at residue 179
XX (ser in the native sequence). It has prolactin antagonist
XX activity, antagonising the stimulation of T lymphoma cell growth in
XX the presence of non-phosphorylated prolactin. Claimed prolactin
XX antagonists (see AAW3607-18) comprise prolactin substitution mutant
XX proteins and C-terminal peptides. The Antagonists can be used for
XX the treatment of prolactin dependent cancers and can inhibit
XX T-lymphoma cell proliferation. They are also useful for treatment
XX of prolactinoma, infertility related to abnormal prolactin
XX regulation, some forms of prostatic cancer, miscarriage and
XX ovulation irregularities, as well as in assays to measure levels of
XX non-phosphorylated and phosphorylated prolactin as an indicator of
XX reproductive pathologies and presence or status of a prolactin-
XX dependent tumour, and to raise polyclonal and monoclonal antibodies.
XX
XX Sequence 199 AA:
SQ
Query Match 86.2%; Score 1022; DB 18; Length 199;
Best Local Similarity 98.5%; Pred. No. 2.6e-90;
Matches 196; Conservative 0; Mismatches 3; Indels 0; Gaps 0;
QY 29 LPIPGGAARQCVTLRDLFDRAYVLSHYIHNLSEMFSEFDRRYTHGRFTKAINSCHT 88
DB 1 lpicpggaarqcvcltrldfdravvlsnyhlnlsemfsefdkryumygrflltkainscht 60
QY 89 SSLATPEDKEAOQOMKDFLSLIVSILRSWNPEPLVYTVRGKQAEPEALISKAIVE 148
DB 61 sslatpedkeagqhgkdfslislvswneplvlyhvtvrgmqeapealiskaveie 120
QY 149 EQTKRLLEGAMELIVSOVHPETKENEIYPWVGSLPQMADEESRLSAVYNNLHCLRRPSH 208
DB 121 eqtkrllegamelivsqvhpckeneiypwvsqslpqlmadeesrlsavynllhclrrdxh 180
QY 209 KIDNYLKLKLCRIITHNNC 227
DB 181 kidnylklklcrilhnnmc 199
RESULT 11
ID AAR05699 standard; protein: 229 AA.
XX
XX AAR05699;
XX AC
XX XX
XX 16-AUG-1990 (first entry)

```

```

XX
XX DE Preprolactin from plasmid pcPRRL.
XX
XX KW Prolactin; preprolactin; pituitary; fowl; poultry; ds.
XX
XX FH Key Location/Qualifiers
FT Peptide 11..229
FT /label=Prolactin gene.
XX
XX JF02053495-A.
XX
XX PD 22-FEB-1990.
XX
XX PF 18-AUG-1988; 88JP-0203913.
XX
XX PR 18-AUG-1988; 88JP-0203913.
XX
XX (NIGC-) NIPPON GENE KK.
XX
XX PA WPI; 1990-103124/14.
XX
XX DR N-PSDB; AA003736.
XX
XX PT Recombinant avian prolactin and recombinant avian preprolactin -
XX used for avian breeding and proliferation.
XX
XX PS Disclosure; Fig 1; 9pp; Japanese.
XX
XX CC Plasmid pcPRRL can be transfected into an E.coli expression system,
XX CC the mature prolactin derived, may be used to induce maternal behaviour in
XX CC fowl and encourage breeding and proliferation.
XX
XX Sequence 229 AA:
SQ
Query Match 66.1%; Score 783; DB 11; Length 229;
Best Local Similarity 66.8%; Pred. No. 2.8e-67;
Matches 153; Conservative 32; Mismatches 42; Indels 2; Gaps 2;
QY 1 MNKGSPPKGSLL-LLVSNLLC-QSVAPPICPGAARQCVTLRDLFDRAYVLSHYIH 58
DB 1 msnrgaslkjgflflavvlnsltlkgytspicpgisvncqvslgelfdravvlskshyh 60
QY 59 NLSEMFSEFDRRYTHGRFTKAINSCHTSSLATPEDKEAOQOMKDFLSLIVSILRS 118
DB 61 ylsseifnefderyagrgflltkavngchtslttpeckeqagqihdellnlvgyvirs 120
QY 119 WNEPLVYTVRGKQAEPEALISKAIVEEOTKRLLEGAMELIVSOVHPETKENEIYPW 178
DB 121 wndplvlhasevqrllkeapdtllwkaiveleeqnkrlllegmekivgrvshagneiys 180
QY 179 SGLPSIQMADEESRLSAVYNNLHCLRRDSHKIDNYLKLKLCRIITHNNC 227
DB 181 dglpslqmadeesrlsfatynllhchrrshkldnylklklcrilhdsnc 229
RESULT 12
ID AAR87090 standard; protein: 199 AA.
XX
XX AC AAR87090;
XX
XX 13-JUN-1996 (first entry)
XX
XX DE Turkey prolactin.
XX
XX KW Turkey; prolactin; glutathione-S-transferase; fusion protein; egg;
XX KW immunisation; bird; turkey; broodiness; antibody.
XX
XX OS Meleagris gallopavo.
XX
XX PN FR2719480-A1.
XX
XX PD 10-NOV-1995.

```

XX	05-MAY-1994;	94FR-0005550.
PF		
XX	05-MAY-1994;	94FR-0005550.
FR		
XX	(INRG ) INRA INST NAT RECH AGRONOMIQUE.	
PA		
XX		
PI	Guemene D, Karatzas C, Zadworny D;	
XX		
DR	WPI; 1995-384532/50.	
XX	N-PSDB; AAT03456.	
PT	Controlling broodiness in birds, esp. turkeys - by active	
XX	immunisation with prolactin fusion protein or passive immunisation	
XX	with anti-prolactin antibody	
PS	Claim 2; Page 27-28; 41pp; French.	
XX		
CC	This is the sequence of the turkey prolactin. The corresp. gene can	
CC	be used to produce a glutathione-S-transferase/prolactin fusion protein	
CC	(see AAT03457) for direct immunisation of birds, esp. turkeys, during	
CC	the rearing stage of the animal's life, prior to sexual maturity, in	
CC	order to prevent or treat broodiness in the birds. Alternatively the	
CC	prolactin protein can be to raise antibodies for passive immunisation	
CC	for prolactin during the egg laying stage.	
XX		
XX	Sequence 199 AA;	
XX		

Query Match	63.68	Score 754	DB 16	Length 199
Best Local Similarity	68.88	Pred. No. 1,4e-64		
Matches 137	Conservative 30	Mismatches 32	Indels 0	Gaps 0
QY	29	LPIGCGAARCOVTLRDUDFRAVVYLSHYIHNLSSEMESEFDPKRYTHGGRFTKAINSCHT	88	
Db	1	lpicsgsvncvqalgetlfdavrlshyihfslseiftefeierqagqgffltkavngcht	60	
QY	89	SSLATPEDEKDAQOQMNQDPLSLIVSIRSNNEPILYHLYTEVRGQEARPEALSKAVETE	148	
Db	61	ssltpepeketqgihneellnlllytrsvndplihlasevqrkkeepcrltkwaweie	120	
QY	149	EOTRRLLEGMLIYQSOUPETRKENDIYRVPWGSPLQWADDESRLSAYVNLHLCRRPSH	208	
Db	121	eqnkrlllegmeklygrlshsgdagnevfevqgwjpalqgladecsrllfalyllhccrrtssh	180	
QY	209	KIDNYLKLKLCRIITHNNNC	227	
Db	181	kidnylklvkcrlthdnnc	199	

PD 10-NOV-1995.  
XX  
XX 05-MAY-1994; 94FR-0005550.  
XX  
XX 05-MAY-1994; 94FR-0005550.  
XX  
XX (INRG ) INRA INST NAT RECH AGRONOMIQUE.  
XX  
XX Guemene D, Karatzas C, Zadworny D;  
PI  
XX  
XX MPI: 1995-384532/50.  
DR  
XX N-PSDB; AAT03457.  
XX  
XX Controlling broodiness in birds, esp. turkeys - by active  
PT immunisation with prolactin fusion protein or passive immunisation  
PT with anti-prolactin antibody  
XX  
XX Claim 3; Page 29-31; 41pp; French.  
XX  
XX This is the sequence of a glutathione-S-transferase/turkey prolactin  
CC fusion protein. The fusion protein can be used to actively immunise  
CC birds, esp. turkeys, pref. during the rearing stage of the animal's  
CC life, prior to sexual maturity. In order to prevent or treat broodiness  
CC in the birds. Alternatively the prolactin protein (R879090) can be  
CC used to raise antibodies for passive immunisation, for preventing or  
CC treating broodiness during the egg laying stages.  
XX  
XX Sequence 426 AA;  
S0

	Query Match	63.6%	Score 754	DB 16	Length 426
	Best Local Similarity	68.8%	Pred. No. 3.9e-64		
	Matches 137	Conservative 30	Mismatches 32	Indels 0	Gaps 0
QY	29	LPICPGARCOVTLRDLFDRAVYVSHYVHNLSSEMFSEFDRIYHGRFTKAINSCHT	88		
Db	228	lpicsgsgvncvsigelfrdavrlshyhlfslsefnfeoderyqgfgfkavngcht	287		
QY	89	SSLAPPEKEQAOQONCKDFLSLIVSTRSNNEPLHYLHTEYRKGQEAPEALISAAVEIE	148		
Db	288	ssltlppedkeqgqlhheelllnlllgvrlrswdplihlhasevqrllkeapdclllwkvade	347		
QY	149	EOTKRLLEGMEILISQVHPETKEENIEYDVWSGFLSQAADERSRLRAYVNLHLCRRRDSH	208		
Db	348	eqnkrlllegmekiygrlthsgdagnevfevsgwdglsplqgladedsrflfaeynlhclrrdsh	407		
QY	209	KIDNTKLKLCRIIHNNNC	227		
Db	408	kldhylvklvkrllhndnc	426		



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GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: April 25, 2002, 11:07:21 ; Search time 23.48 Seconds  
(without alignments)  
1414.132 Million cell updates/sec

Title: US-09-815-306-1

Perfect score: 227

Sequence: 1 MNKGSPPKSGSLLLLSNL.....HKIDNYLKLKCRITHHNNC 227

Scoring table: OLIGO  
Gapop 60.0 , Gapext 60.0

Searched: 473505 seqs, 146272329 residues

Word size : 0

Total number of hits satisfying chosen parameters: 473505

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :

SPREMBL\_17:\*  
1: sp\_archaea:\*  
2: sp\_bacteria:\*  
3: sp\_fungi:\*  
4: sp\_human:\*  
5: sp\_invertebrate:\*  
6: sp\_mammal:\*  
7: sp\_mhc:\*  
8: sp\_organelle:\*  
9: sp\_phage:\*  
10: sp\_plant:\*  
11: sp\_rodent:\*  
12: sp\_virus:\*  
13: sp\_vertebrate:\*  
14: sp\_unclassified:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	218	96.0	228	Q9NUH9	Q9nuh9 homo sapien
2	44	19.4	199	Q9TS41	Q9ts41 papio (dabo
3	35	15.4	44	Q9UD43	Q9ud43 homo sapien
4	19	8.4	229	Q9DEI3	Q9dei3 gallus gall
5	16	7.0	16	Q9UP51	Q9up51 homo sapien
6	14	6.2	161	Q63293	Q63293 ratius norv
7	13	5.7	227	Q9CYL2	Q9cy12 mus musculu
8	13	5.7	227	Q9CPO0	Q9cp00 mus musculu
9	13	5.7	228	Q9CYL8	Q9cy18 mus musculu
10	13	5.7	228	Q9CPO2	Q9cp02 mus musculu
11	12	5.3	103	Q9PSP9	Q9psp9 xenopus lae
12	12	5.3	103	Q9PSP8	Q9psp8 xenopus lae
13	11	4.8	225	Q9QZL1	Q9qz11 microtus m
14	10	4.4	61	Q9PWF9	Q9pwf9 coturnix co
15	10	4.4	227	Q35256	Q35256 mus sapien
16	9	4.0	9	Q9UOW0	Q9uow0 homo sapien
17	9	4.0	220	Q9R0S8	Q9r0s8 ratius norv
18	9	4.0	228	Q9U1I3	Q9u1i3 ratius norv
19	9	4.0	228	Q9J105	Q9j105 mus musculu

20	9	4.0	228	11	Q9JHK0	Q9jkh0 mus musculu
21	8	3.5	20	13	Q9PWQ4	Q9pwq4 gallus gall
22	8	3.5	210	13	Q91170	Q91170 oncorhynch
23	8	3.5	210	13	Q91364	Q91364 oncorhynch
24	8	3.5	210	13	P87495	P87495 carassius a
25	8	3.5	211	13	Q9YCV6	Q9yvc6 paralicthy
26	8	3.5	212	13	Q93337	Q93337 sparus aura
27	8	3.5	212	13	Q91819	Q91819 ictalurus p
28	8	3.5	227	11	Q9CQR8	Q9cqr8 mus musculu
29	8	3.5	324	5	Q44166	Q44166 caenorhabdi
30	8	3.5	362	2	Q56591	Q56591 listonella
31	8	3.5	3851	4	Q43161	Q43161 homo sapien
32	8	3.5	3926	4	Q9UP45	Q9up45 homo sapien
33	8	3.5	3938	11	Q88778	Q88778 ratius norv
34	8	3.5	3942	11	Q88737	Q88737 mus musculu
35	7	3.1	18	11	Q9JTM8	Q9jtm8 ratius norv
36	7	3.1	32	6	Q9TR18	Q9tr18 macropus ru
37	7	3.1	50	10	Q41532	Q41532 triticum ae
38	7	3.1	57	5	Q9VE38	Q9ve38 drosophila
39	7	3.1	66	13	Q91889	Q91889 oncorhynch
40	7	3.1	73	2	Q9F659	Q9f659 helicobacte
41	7	3.1	73	2	Q9F658	Q9f658 helicobacte
42	7	3.1	90	2	Q9RTB8	Q9rtb8 deinococcus
43	7	3.1	99	12	Q9QND1	Q9qnd1 hantaan vir
44	7	3.1	99	12	Q9QND0	Q9qnd0 hantaan vir
45	7	3.1	99	12	Q9QW25	Q9qwm25 hantaan vir

## ALIGNMENTS

RESULT 1  
ID Q9NUH9 PRELIMINARY; PRT; 228 AA.  
AC Q9NUH9  
DT 01-OCT-2000 (TREMBLrel. 15, Created)  
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)  
DT 01-JUN-2001 (TREMBLrel. 17, Last annotation update)  
DE DJ404K8.1 (PROLACTIN).  
GN PRL.  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.  
OX NCBI\_Taxid:9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Nickerson T.;  
RL Submitted (FEB-2000) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AL023883; CAB75684.1; -  
DR InterPro; IPR001400; SOMATOTROPIN.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PRO0836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 228 AA; 25947 MW; C592E517CE186E42 CRC64;

Query Match 96.0% Score 218; DB 4; Length 228;  
Best Local Similarity 100.0%; Pred. No. 2.9e-217; Indels 0; Gaps 0;  
Matches 218; Conservative 0; Mismatches 0;

QY 10 GSLLLLVSNLLCQSVAPLPICPGARCVTLRLDLPRAVLSHYTHNLSEMFSEED 69  
DB 11 GSLLLLVSNLLCQSVAPLPICPGARCVTLRLDLPRAVLSHYTHNLSEMFSEED 70  
QY 70 KRYTHRGKFTKRAINSCHTSLAPPEDEKQAOQMNOKOFLSLIVSLRSMNEPLVLYTE 129  
DB 71 KRYTHRGKFTKRAINSCHTSLAPPEDEKQAOQMNOKOFLSLIVSLRSMNEPLVLYTE 130  
QY 130 VRGMOAPEALISRAVELEEDTKRLLEGMLIVSYVHETKENELYPPWGLSPLOMDE 189  
DB 131 VRGMOAPEALISRAVELEEDTKRLLEGMLIVSYVHETKENELYPPWGLSPLOMDE 190

OY 190 ESRLSAYNNLHCLRRDSHKIDNYLKLKCRITIHNNC 227  
DB 191 ESRLSAYNNLHCLRRDSHKIDNYLKLKCRITIHNNC 228

## RESULT 2

O9TSA1 PRELIMINARY: PRT: 199 AA.  
AC O9TSA1: 01-MAY-2000 (TREMBlrel. 13, Created)  
DT 01-MAY-2000 (TREMBlrel. 13, Last sequence update)  
DE PROLACTIN.  
OS Papio (baboons).  
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheciidae;  
OC Cercopitheciinae.  
OX NCBI\_TaxID=9554;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=92037387; PubMed=1935793;  
RA Cole E.S., Nichols E.H., Lauziere K., Edmunds T., McPherson J.M.;  
RT "Characterization of the microheterogeneity of recombinant primate  
RT prolactin: implications for posttranslational modifications of the  
RT hormone in vivo.";  
RL Endocrinology 129:2639-2646(1991).  
DR HSSP: Q28632; IAN3.  
DR InterPro: IPR001400; SOMATOTROPIN.  
DR Pfam: PF00103; hormone; 1.  
DR PRINTS: PR00836; SOMATOTROPIN.  
DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 199 AA; 22850 MW; 872A8935FEA43E67 CRC64;

Query Match 19.4%; Score 44; DB 6; Length 199;  
Best Local Similarity 100.0%; Pred. No. 3.1e-37;  
Matches 44; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 135 EAPFATLSKAVEIEOTRRLLEGMLYSQVHPETKEINEIYPW 178  
DB 107 EAPFATLSKAVEIEOTRRLLEGMLYSQVHPETKEINEIYPW 150

## RESULT 3

ID O9UDA3 PRELIMINARY: PRT: 44 AA.  
AC O9UDA3: 01-MAY-2000 (TREMBlrel. 13, Created)  
DT 01-MAY-2000 (TREMBlrel. 13, Last sequence update)  
DE PROLACTIN (FRAGMENT).  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=93292510; PubMed=8513798;  
RA Goffin V., Struman I., Goormaghtigh E., Martial J.A.;  
RT "The addition of nine residues at the C-terminus of human prolactin  
RT drastically alters its biological properties.";  
RL Eur. J. Biochem. 214:483-490(1993).  
DR HSSP: Q28632; IAN3.  
DR InterPro: IPR001400; SOMATOTROPIN.  
DR Pfam: PF00103; hormone; 1.  
DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 44 AA; 5416 MW; 707E91C6398F4BF CRC64;

Query Match 15.4%; Score 35; DB 4; Length 44;  
Best Local Similarity 100.0%; Pred. No. 1.8e-28;  
Matches 35; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 193 LSAVYNNLHCLRRDSHKIDNYLKLKCRITIHNNC 227  
DB 1 LSAVYNNLHCLRRDSHKIDNYLKLKCRITIHNNC 35

## RESULT 4

O9DEI3 PRELIMINARY: PRT: 229 AA.  
AC O9DEI3: 01-MAR-2001 (TREMBlrel. 16, Created)  
DT 01-MAR-2001 (TREMBlrel. 16, Last sequence update)  
DE PROLACTIN.  
OS Gallus gallus (Chicken).  
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;  
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
OC Gallus.  
OX NCBI\_TaxID=9031;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Onkubo T., Tanaka M., Nakashima K.;  
RT "Cloning and characterization of chicken prolactin gene.";  
RL Submitted (FEB-1998) to the EMBL/GenBank/DBJ databases.  
DR EMBL: AB011438; BAB18728.1; JOINED.  
DR EMBL: AB011434; BAB18728.1; JOINED.  
DR EMBL: AB011435; BAB18728.1; JOINED.  
DR EMBL: AB011436; BAB18728.1; JOINED.  
DR EMBL: AB011437; BAB18728.1; JOINED.  
DR InterPro: IPR001400; SOMATOTROPIN.  
DR Pfam: PF00103; hormone; 1.  
DR PRINTS: PR00836; SOMATOTROPIN.  
DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
SQ SEQUENCE 229 AA; 25863 MW; 11314FE65F775AE CRC64;

Query Match 8.4%; Score 19; DB 13; Length 229;  
Best Local Similarity 100.0%; Pred. No. 2.6e-11;  
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRRDSHKIDNYLKLKCRITIHNNC 215  
DB 199 YNLHCLRRDSHKIDNYLKLKCRITIHNNC 217

## RESULT 5

ID O9UP51 PRELIMINARY: PRT: 16 AA.  
AC O9UP51: 01-MAY-2000 (TREMBlrel. 13, Created)  
DT 01-MAY-2000 (TREMBlrel. 13, Last sequence update)  
DE PROLACTIN (FRAGMENT).  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=84264464; PubMed=6146607;  
RA Takahashi H., Nabeshima Y., Nabeshima Y., Ogata K., Takeuchi S.;  
RT "Molecular cloning and nucleotide sequence of DNA complementary to  
RT human decidal prolactin mRNA.";  
RL J. Biochem. 95:1491-1499(1984).  
RN [2]  
RP SEQUENCE FROM N.A.  
RA Stevens F.R.A., Hajjeh A., John S., Thomson W., Worthington J.,  
RA Davis J.R.E., Ollier W.E.R.;  
RT Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.  
DR EMBL: AF068859; AAD12943.1; -.  
DR HSSP: Q28632; IAN3.  
FT NON\_TER 1 1

```

FT  NON TER      16      16
SQ  SEQUENCE     16 AA: 1877 MW: 388F0E59FC3F2F CRC64;

Query Match
Best Local Similarity 100.0%; Score 16; DB 4; Length 16;
Matches 16; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  183 SLOWADEESRLSAYYN 198
    |||||
DB  1 SLOWADEESRLSAYYN 16

RESULT 6
ID  Q63293      PRELIMINARY; PRT: 161 AA.
AC  Q63293;
DT  01-NOV-1996 (TREMBlrel. 01, Created)
DT  01-NOV-1996 (TREMBlrel. 01, Last sequence update)
DE  01-JUN-2001 (TREMBlrel. 17, Last annotation update)
DE  PROLACTIN PRECURSOR (PRL) (FRAGMENT).
GN  PRL.
OS  Rattus norvegicus (Rat).
OC  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC  Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX  NCBI_TaxID=10116;

RN  1
RP  SEQUENCE FROM N.A.
RX  MEDLINE=79179804; PubMed=375200;
RA  Gubbins E.J., Maurer R.A., Hartley J.L., Donelson J.E.;
RT  "Construction and analysis of recombinant DNAs containing a structural
RL  gene for rat prolactin."
RC  Nucleic Acids Res. 6:915-930(1979).
CC  -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
    PROMOTING LACTATION.
CC  -1- SUBCELLULAR LOCATION: SECRETED.
CC  -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR  EMBL; V01250; CA24563.1; -.
DR  HSSP; Q28632; IAN3.
DR  InterPro: IPR001400; SOMATOTROPIN.
DR  Pfam: PF00103; hormone; 1.
DR  PRINTS: PR00836; SOMATOTROPIN.
DR  PROSITE: PS00266; SOMATOTROPIN_1. 1.
KW  Hormone; Parturition; Lactation; Pituitary; Signal.
FT  NON_TER      1
FT  SIGNAL        <1 16
FT  CHAIN         17 >161
FT  DISULFID     20 25 BY SIMILARITY.
FT  NON_TER      161
SQ  SEQUENCE     161 AA: 18228 MW: 0B1E02D9AA91B17F CRC64;

Query Match
Best Local Similarity 100.0%; Score 14; DB 11; Length 161;
Matches 14; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  88 TSSLATPEDEKQAO 101
    |||||
DB  74 TSSLATPEDEKQAO 87

RESULT 7
ID  Q9CYL2      PRELIMINARY; PRT: 227 AA.
AC  Q9CYL2;
DT  01-JUN-2001 (TREMBlrel. 17, Created)
DT  01-JUN-2001 (TREMBlrel. 17, Last sequence update)
DE  01-JUN-2001 (TREMBlrel. 17, Last annotation update)
DE  PROLACTIN.
GN  PRL.
OS  Mus musculus (Mouse).
OC  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC  Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

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OX  NCBI_TaxID=10090;
RN  11
RP  SEQUENCE FROM N.A.
RC  STRAIN=C57BL/6J; TISSUE=EMBRYO;
RX  MEDLINE=21085660; PubMed=11217851;
RA  Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA  Arikawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA  Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamana I.,
RA  Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA  Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA  Fleischmann W., Gaasterland T., Gissi C., King B., Kochwa H.,
RA  Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA  Schriml L.M., Staudt F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA  Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA  Brownstein M.J., Bult C., Fletcher C., Fujita M., Kamiya M., Lee N.H.,
RA  Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA  Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA  Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA  Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.F.,
RA  Suzuki H., Toyooka K., Wang K.H., Weitz C., Whitaker C., Wilming L.,
RA  Wyszewski-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohlsuk S.,
RA  Hayashizaki Y.,
RT  "Functional annotation of a full-length mouse cDNA collection."
RL  Nature 409:685-690(2001).
DR  EMBL; AK017562; BAB30806.1; -.
DR  MGD; MG1:97762; PRL.
DR  InterPro: IPR001400; SOMATOTROPIN.
DR  Pfam: PF00103; hormone; 1.
DR  PRINTS: PR00836; SOMATOTROPIN.
DR  PROSITE: PS00338; SOMATOTROPIN_2. 1.
SQ  SEQUENCE     227 AA: 25771 MW: F24B1D68B8B89D54 CRC64;

Query Match
Best Local Similarity 100.0%; Score 13; DB 11; Length 227;
Matches 13; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY  88 TSSLATPEDEKQAO 100
    |||||
DB  88 TSSLATPEDEKQAO 100

RESULT 8
ID  Q9CP00      PRELIMINARY; PRT: 227 AA.
AC  Q9CP00;
DT  01-JUN-2001 (TREMBlrel. 17, Created)
DT  01-JUN-2001 (TREMBlrel. 17, Last sequence update)
DE  01-JUN-2001 (TREMBlrel. 17, Last annotation update)
DE  PROLACTIN.
GN  PRL.
OS  Mus musculus (Mouse).
OC  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC  Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX  NCBI_TaxID=10090;

RN  11
RP  SEQUENCE FROM N.A.
RC  STRAIN=C57BL/6J; TISSUE=EMBRYO;
RX  MEDLINE=21085660; PubMed=11217851;
RA  Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA  Arikawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA  Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamana I.,
RA  Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA  Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA  Fleischmann W., Gaasterland T., Gissi C., King B., Kochwa H.,
RA  Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA  Schriml L.M., Staudt F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA  Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA  Brownstein M.J., Bult C., Fletcher C., Fujita M., Kamiya M., Lee N.H.,
RA  Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA  Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,

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RA Nordone P., Ringwald M., Rodriguez I., Sakamoto N.,  
 RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,  
 RA Suzuki H., Toyono-oka K., Wang K.H., Weitz C., Whitaker C., Wilming L.,  
 RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohlsuki S.,  
 RA Hayashizaki Y.,  
 RT "Functional annotation of a full-length mouse cDNA collection."  
 RL Nature 409:685-690(2001).  
 DR EMBL: AK017584; BAB30821.1; -  
 DR EMBL: AK017520; BAB30786.1; -  
 DR MGD: MGI:97762; PRL.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
 SO SEQUENCE 227 AA; 25657 MW; CFP9840CA760FA7F CRC64;

Query Match 5.7%; Score 13; DB 11; Length 227;  
 Best Local Similarity 100.0%; Pred. No. 4.2e-05;  
 Matches 13; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 Oy 88 TSSLATPEDEKQA 100  
 Db 88 TSSLATPEDEKQA 100

RESULT 9  
 O9CYL8 PRELIMINARY: PRT; 228 AA.  
 AC O9CYL8:  
 DT 01-JUN-2001 (TREMBlrel. 17, Created)  
 DT 01-JUN-2001 (TREMBlrel. 17, Last sequence update)  
 DE 01-JUN-2001 (TREMBlrel. 17, Last annotation update)  
 DE PROLACTIN.  
 GN PRL.  
 OS Mus musculus (Mouse)  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 OX NCBI\_TaxID=10090;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=EMBRYO;  
 RX MEDLINE=21085660; PubMed=11217851;  
 RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,  
 RA Arakawa T., Hara A., Fukunishi Y., Kono H., Adachi J., Fukuda S.,  
 RA Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanka I.,  
 RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,  
 RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,  
 RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochwa H.,  
 RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,  
 RA Schirml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,  
 RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,  
 RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,  
 RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,  
 RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,  
 RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamlya M., Lee N.H.,  
 RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,  
 RA Nordone P., Ringwald M., Rodriguez I., Sakamoto N.,  
 RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,  
 RA Suzuki H., Toyono-oka K., Wang K.H., Weitz C., Whitaker C., Wilming L.,  
 RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohlsuki S.,  
 RA Hayashizaki Y.,  
 RT "Functional annotation of a full-length mouse cDNA collection."  
 RL Nature 409:685-690(2001).  
 DR EMBL: AK017547; BAB30799.1; -  
 DR MGD: MGI:97762; PRL.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
 SO SEQUENCE 228 AA; 25756 MW; 40B670424B89523B CRC64;

Query Match 5.7%; Score 13; DB 11; Length 228;

Best Local Similarity 100.0%; Pred. No. 4.2e-05;  
 Matches 13; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 Oy 88 TSSLATPEDEKQA 100  
 Db 89 TSSLATPEDEKQA 101

RESULT 10  
 O9CP02 PRELIMINARY: PRT; 228 AA.  
 AC O9CP02:  
 DT 01-JUN-2001 (TREMBlrel. 17, Created)  
 DT 01-JUN-2001 (TREMBlrel. 17, Last sequence update)  
 DE 01-JUN-2001 (TREMBlrel. 17, Last annotation update)  
 DE PROLACTIN.  
 GN PRL.  
 OS Mus musculus (Mouse)  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 OX NCBI\_TaxID=10090;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=EMBRYO;  
 RX MEDLINE=21085660; PubMed=11217851;  
 RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,  
 RA Arakawa T., Hara A., Fukunishi Y., Kono H., Adachi J., Fukuda S.,  
 RA Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanka I.,  
 RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,  
 RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,  
 RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochwa H.,  
 RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,  
 RA Schirml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,  
 RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,  
 RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,  
 RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,  
 RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamlya M., Lee N.H.,  
 RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,  
 RA Nordone P., Ringwald M., Rodriguez I., Sakamoto N.,  
 RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,  
 RA Suzuki H., Toyono-oka K., Wang K.H., Weitz C., Whitaker C., Wilming L.,  
 RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohlsuki S.,  
 RA Hayashizaki Y.,  
 RT "Functional annotation of a full-length mouse cDNA collection."  
 RL Nature 409:685-690(2001).  
 DR EMBL: AK017579; BAB30816.1; -  
 DR EMBL: AK017521; BAB30787.1; -  
 DR MGD: MGI:97762; PRL.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
 SO SEQUENCE 228 AA; 25728 MW; AFCADF003728CD77 CRC64;

Query Match 5.7%; Score 13; DB 11; Length 228;  
 Best Local Similarity 100.0%; Pred. No. 4.2e-05;  
 Matches 13; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 Oy 88 TSSLATPEDEKQA 100  
 Db 89 TSSLATPEDEKQA 101

RESULT 11  
 O9PSP9 PRELIMINARY: PRT; 103 AA.  
 AC O9PSP9:  
 DT 01-MAY-2000 (TREMBlrel. 13, Created)  
 DT 01-MAY-2000 (TREMBlrel. 13, Last sequence update)  
 DE 01-JUN-2001 (TREMBlrel. 17, Last annotation update)  
 DE PROLACTIN, xPRL-T (FRAGMENT(S)).  
 OS Xenopus laevis (African clawed frog).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Amphibia; Batrachia; Anura; Mesobatrachia; Pipidoidea; Pipidae;  
 OC Xenopodinae; Xenopus.  
 OX NCBI\_TaxID=83355;  
 RN [1]  
 RP SEQUENCE.  
 RX MEDLINE=94040640; PubMed=8224774;  
 RA Yamashita K., Matsuda K., Hayashi H., Hanaoka Y., Tanaka S.,  
 RT "Isolation and characterization of two forms of Xenopus prolactin.";  
 RL Gen. Comp. Endocrinol. 91:307-317(1993).  
 DR HSSP: Q28632: 1AN3.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 FT NON\_TER 1  
 FT NON\_CONS 20 21  
 FT NON\_TER 103 103  
 SQ SEQUENCE 103 AA; 11461 MW; 37A5894E7A92F6F0 CRC64;

Query Match 5.3%; Score 12; DB 13; Length 103;  
 Best Local Similarity 100.0%; Pred. No. 0.00023;  
 Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 148 EEOQTRKLEGME 159  
 |||||  
 DB 51 EEOQTRKLEGME 62

RESULT 12

ID Q9PSP8 PRELIMINARY; PRT: 103 AA.  
 AC Q9PSP8;  
 DT 01-MAY-2000 (TREMBLrel. 13, Created)  
 DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)  
 DT 01-JUN-2001 (TREMBLrel. 17, Last annotation update)  
 DE PROLACTIN, XPRL-II (FRAGMENT).  
 OS Xenopus laevis (African clawed frog).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Amphibia; Batrachia; Anura; Mesobatrachia; Pipidoidea; Pipidae;  
 OC Xenopodinae; Xenopus.  
 OX NCBI\_TaxID=83355;  
 RN [1]  
 RP SEQUENCE.  
 RX MEDLINE=94040640; PubMed=8224774;  
 RA Yamashita K., Matsuda K., Hayashi H., Hanaoka Y., Tanaka S.,  
 RT "Isolation and characterization of two forms of Xenopus prolactin.";  
 RL Gen. Comp. Endocrinol. 91:307-317(1993).  
 DR HSSP: Q28632: 1AN3.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 FT NON\_TER 1  
 FT NON\_CONS 20 21  
 FT NON\_TER 103 103  
 SQ SEQUENCE 103 AA; 11658 MW; F4484BB64D570240 CRC64;

Query Match 5.3%; Score 12; DB 13; Length 103;  
 Best Local Similarity 100.0%; Pred. No. 0.00023;  
 Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 148 EEOQTRKLEGME 159  
 |||||  
 DB 51 EEOQTRKLEGME 62

RESULT 13

ID Q9OZL1 PRELIMINARY; PRT: 225 AA.  
 AC Q9OZL1;  
 DT 01-MAY-2000 (TREMBLrel. 13, Created)  
 DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)

DT 01-JUN-2001 (TREMBLrel. 17, Last annotation update)  
 DE PROLACTIN.  
 GN PRL.  
 OS Microtus montebelli (Japanese grass vole).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Arvicolinae;  
 OC Microtus.  
 OX NCBI\_TaxID=79202;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Ohnohshi S., Asami W., Kaneko M., Yoshida S., Yoshida T., Tomogane H.;  
 RT "Sequencing of prolactin cDNA of Japanese field vole.";  
 RL Submitted (Aug-1999) to the EMBL/Genbank/DBJ databases.  
 DR EMBL: AF178933; AAD53180.1; -.  
 DR HSSP: Q28632: 1AN3.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
 SQ SEQUENCE 225 AA; 25719 MW; 323383E8407085BA CRC64;

Query Match 4.8%; Score 11; DB 11; Length 225;  
 Best Local Similarity 100.0%; Pred. No. 0.0048;  
 Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 88 TSSLATPEDEKE 98  
 |||||  
 DB 86 TSSLATPEDEKE 96

RESULT 14

ID Q9PWF9 PRELIMINARY; PRT: 61 AA.  
 AC Q9PWF9;  
 DT 01-MAY-2000 (TREMBLrel. 13, Created)  
 DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)  
 DT 01-JUN-2001 (TREMBLrel. 17, Last annotation update)  
 DE PROLACTIN (FRAGMENT).  
 GN PRL.  
 OS Coturnix coturnix japonica (Japanese quail).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 OC Coturnix.  
 OX NCBI\_TaxID=93934;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Kansaku N., Shimada K.;  
 RT "Partial PCR cloning of quail prolactin.";  
 RL Submitted (Aug-1999) to the EMBL/Genbank/DBJ databases.  
 DR EMBL: AB030910; BAA83342.1; -.  
 DR HSSP: Q28632: 1AN3.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 FT NON\_TER 1  
 FT NON\_TER 61 61  
 SQ SEQUENCE 61 AA; 6994 MW; 71516EF7E0683EF CRC64;

Query Match 4.4%; Score 10; DB 13; Length 61;  
 Best Local Similarity 100.0%; Pred. No. 0.017;  
 Matches 10; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 93 TPEDKEQAOQ 102  
 |||||  
 DB 35 TPEDKEQAOQ 44

RESULT 15

035256

```

ID 035256      PRELIMINARY:      PRT;      227 AA.
AC 035256;
DT 01-JAN-1998 (TREMblrel. 05, Created)
DT 01-JAN-1998 (TREMblrel. 05, Last sequence update)
DT 01-JUN-2001 (TREMblrel. 17, Last annotation update)
DE PROLACTIN-LIKE PROTEIN A PRECURSOR.
GN PLPA OR PLP-A.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Euteria; Rodentia; Sciurognathi; Muridae; Mus.
OX NCBI_TaxId=10090;
RN [1]
RP SEQUENCE FROM N.A.
RA Muller H., Ishimura R., Orwig K.E., Liu B., Soares M.J.;
RL Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J;
RX MEDLINE=98049410; PubMed=9389542;
RA Lin J., Poole J., Linzer D.I.;
RT "Three new members of the mouse prolactin/growth hormone family are
RL homologous to proteins expressed in the rat.";
RL Endocrinology 138:5541-5549(1997).
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J;
RA Lin J., Poole J., Linzer D.I.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF015562; AAB68824.1; -.
DR EMBL; AF011383; AAB92399.1; -.
DR HSSP; Q28632; 1AN3.
DR MGD; MGI:1206587; Plpa.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone_1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
KW Signal.
FT SIGNAL.
FT CHAIN.
SQ SEQUENCE      227 AA; 26336 MW; 585B2731DCED5786 CRC64;

```

```

Query Match      4.4%; Score 10; DB 11; Length 227;
Best Local Similarity 100.0%; Pred. No. 0.053;
Matches 10; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 13 LLLVSNLL 22
   |||||
DB 15 LLLVSNLL 24

```

Search completed: April 25, 2002, 11:09:19  
 Job time: 118 sec

GenCore version 4.5  
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: April 25, 2002, 11:07:01 ; Search time 17.16 Seconds  
(without alignments)  
1007.670 Million cell updates/sec

Title: US-09-815-306-1

Perfect score: 227

Sequence: 1 MNKGSPPKWSLLLLVSNL.....HKIDNYLKLKCRITNNNC 227

Scoring table: OLIGO  
Gapop 60.0 , Gapext 60.0

Searched: 219241 seqs, 76174552 residues

Word size : 0

Total number of hits satisfying chosen parameters: 219241

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :

PIR\_68:\*\*  
1: PIR1:\*\*  
2: PIR2:\*\*  
3: PIR3:\*\*  
4: PIR4:\*\*

Prod. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	227	100.0	227	1 LCHU	prolactin precursor
2	195	85.9	228	2 A61402	prolactin precursor
3	26	11.5	199	2 S15131	prolactin - Arabia
4	26	11.5	229	1 LCPC	prolactin precursor
5	25	11.0	175	2 S18882	prolactin - Americ
6	25	11.0	199	1 LCHO	prolactin - horse
7	24	10.6	134	2 I51233	prolactin - Japane
8	24	10.6	198	1 A60620	prolactin - green
9	24	10.6	207	2 A60969	prolactin precursor
10	19	8.4	229	2 A61133	prolactin precursor
11	19	8.4	229	2 A60972	prolactin precursor
12	17	7.5	229	2 JC4631	prolactin precursor
13	16	7.0	199	2 PN0128	prolactin - sel wh
14	14	6.2	226	1 LCRT	prolactin precursor
15	13	5.7	228	1 LCMS	prolactin precursor
16	12	5.3	229	1 LCBO	prolactin precursor
17	12	5.3	229	1 LCCH	prolactin precursor
18	12	5.3	229	2 I83982	prolactin precursor
19	10	4.4	188	2 B28106	prolactin - goat
20	10	4.4	199	2 JS0430	prolactin - elepha
21	10	4.4	212	2 A32477	prolactin I precu
22	10	4.4	212	2 I51034	prolactin I - Moza
23	10	4.4	223	2 A49160	placental lactogen
24	10	4.4	227	2 A24911	prolactin-like pro
25	9	4.0	200	2 S34604	prolactin - marble
26	9	4.0	209	2 S30541	prolactin precursor
27	8	3.5	177	2 A28106	prolactin, 20K - M
28	8	3.5	187	2 S06677	prolactin II - chu
29	8	3.5	187	2 S02304	prolactin I - chun

30	8	3.5	200	2 B32477	prolactin II precu
31	8	3.5	207	2 S21965	prolactin - silver
32	8	3.5	210	1 S01435	prolactin precursor
33	8	3.5	210	2 I51084	prolactin precursor
34	8	3.5	210	2 PN0092	prolactin precursor
35	8	3.5	210	2 S16765	prolactin precursor
36	8	3.5	210	2 A31364	prolactin precursor
37	8	3.5	210	2 S34351	prolactin precursor
38	8	3.5	210	2 S52475	prolactin - Atlant
39	8	3.5	210	2 S71486	prolactin precursor
40	8	3.5	211	2 S00359	prolactin precursor
41	8	3.5	212	2 I51275	prolactin precursor
42	8	3.5	226	2 A49159	prolactin precursor
43	8	3.5	236	2 A37930	placental lactogen
44	8	3.5	238	2 B36284	prolactin-like pro
45	8	3.5	324	2 T32535	hypothetical prote

#### ALIGNMENTS

##### RESULT 1

LCHU

prolactin precursor [validated] - human

C:Species: Homo sapiens (man)

C:Date: 30-Jun-1979 #sequence, revision 23-Oct-1981 #text\_change 08-Dec-2000

C:Accession: A90998; A92318; A28867; PN0089; A92177; A01505

R:Truong, A.T.; Duez, C.; Belayew, A.; Renard, A.; Pictet, R.; Bell, G.I.; Martial, J

EMBO J. 3, 429-437, 1984

A:Title: Isolation and characterization of the human prolactin gene.

A:Reference number: A90998; MUID:84182507

A:Accession: A90998

A:Molecule type: DNA

A:Residues: 1-227 <TRU>

R:Cooke, N.E.; Colt, D.; Shine, J.; Baxter, J.D.; Martial, J.A.

J. Biol. Chem. 256, 4007-4016, 1981

A:Title: Human prolactin: cDNA structural analysis and evolutionary comparisons.

A:Reference number: A92318; MUID:81168179

A:Accession: A92318

A:Molecule type: mRNA

A:Residues: 1-227 <COO>

A:Cross-references: GB:V00566; GB:J00299; NID:934210; PIDN:CAA23829.1; PID:934211

R:Takehashi, H.; Nabeshima, Y.; Nabeshima, Y.; Ogata, K.; Takeuchi, S.

J. Biochem. 95, 1491-1499, 1984

A:Title: Molecular cloning and nucleotide sequence of DNA complementary to human dect

A:Reference number: A28867; MUID:84264464

A:Accession: A28867

A:Molecule type: mRNA

A:Residues: 1-205, 'H', 207-227 <TAK>

A:Cross-references: EMBL:M29386

A:Note: the authors translated the codon CAT for residue 206 as Asp

R:Metveltskov, N.P.; Golovin, S.Y.; Zelenin, S.M.; Morozova, T.V.; Karginov, V.A.; Che

Biorrg. Khim. 13, 1687-1690, 1987

A:Title: Synthesis, cloning and sequencing of cDNA complementary to mRNA of prolactin

A:Reference number: PN0089; MUID:88221681

A:Accession: PN0089

A:Molecule type: mRNA

A:Residues: 45-227 <MER>

A:Experimental source: pituitary gland

A:Note: the authors translated the codon AAC for residue 15 as Asp

R:Shome, B.; Parlow, A.F.

J. Clin. Endocrinol. Metab. 45, 1112-1115, 1977

A:Title: Human pituitary prolactin (hPRL): the entire linear amino acid sequence.

A:Reference number: A92762; MUID:78046207

A:Accession: A92762

A:Molecule type: protein

A:Residues: 29-109, 'VS', 112, 'L', 115-132, 'X', 134-171, 'D', 173-189, 'SE', 192-227 <SHO>

R:Jacobs, J.W.; Mall, H.D.

J. Biol. Chem. 250, 3629-3636, 1975

A:Title: High sensitivity automated sequence determination of polypeptides.

A:Reference number: A92177; MUID:75151509

A:Accession: A92177

A:Molecule type: protein





OY 197 YNLHCLRDSHKIDNYLKLKCR II 222  
 |||||||  
 Db 199 YNLHCLRDSHKIDNYLKLKCR II 224

# RESULT 5

S18882  
 prolactin - American mink (fragment)  
 C:Species: Mustela vison (American mink)  
 C:Date: 06-Jan-1995 #sequence\_revision 06-Jan-1995 #text\_change 16-Jul-1999  
 C:Accession: S18882  
 R:Bondar, A.A.; Golovin, S.J.; Mertvetsov, N.P.  
 submitted to the EMBL Data Library, November 1991  
 A:Reference number: S18882  
 A:Accession: S18882  
 A:Status: preliminary  
 A:Molecule type: mRNA  
 A:Residues: 1-175 <BON>  
 A:Cross-references: EMBL:X63235; NID:g1182; PIDN:CAA44910.1; PID:g1183  
 C:Superfamily: prolactin

Query Match 11.0%; Score 25; DB 2; Length 175;  
 Best Local Similarity 100.0%; Pred. No. 1.7e-17;  
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRDSHKIDNYLKLKCR I 221  
 |||||||  
 Db 145 YNLHCLRDSHKIDNYLKLKCR I 169

# RESULT 6

LCHO  
 prolactin - horse  
 C:Species: Equus caballus (domestic horse)  
 C:Date: 30-Jun-1989 #sequence\_revision 30-Jun-1989 #text\_change 20-Aug-1994  
 C:Accession: JK0016  
 R:Lehrman, S.R.; Lahm, H.W.; Miedel, M.C.; Hulmes, J.D.; Li, C.H.  
 Int. J. Pept. Protein Res. 31, 544-554, 1988  
 A:Title: Primary structure of equine pituitary prolactin.  
 A:Reference number: JK0016; MUID:88314465  
 A:Accession: JK0016  
 A:Molecule type: protein  
 A:Residues: 1-199 <LEH>  
 C:Superfamily: prolactin  
 C:Keywords: anterior pituitary; hormone; lactation; placenta  
 F:4-11,58-174,191-199/Disulfide bonds: #status predicted

Query Match 11.0%; Score 25; DB 1; Length 199;  
 Best Local Similarity 100.0%; Pred. No. 1.9e-17;  
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRDSHKIDNYLKLKCR I 221  
 |||||||  
 Db 169 YNLHCLRDSHKIDNYLKLKCR I 193

# RESULT 7

I51233  
 prolactin - Japanese toad (fragment)  
 C:Species: Bufo japonicus (Japanese toad)  
 C:Date: 13-Sep-1996 #sequence\_revision 13-Sep-1996 #text\_change 16-Jul-1999  
 C:Accession: I51233  
 R:Takahashi, N.; Yamamoto, K.; Kikuyama, S.  
 J. Mol. Endocrinol. 11, 343-349, 1993  
 A:Title: Cloning of a toad prolactin cDNA: expression of prolactin mRNA in larval and ad  
 A:Reference number: I51233; MUID:94197900  
 A:Accession: I51233  
 A:Status: preliminary; translated from GB/EMBL/DBD  
 A:Molecule type: mRNA  
 A:Residues: 1-134 <TAK>

A:Cross-references: GB:S69309; NID:g546265; PIDN:AAB30425.1; PID:g546266  
 C:Superfamily: prolactin

Query Match 10.6%; Score 24; DB 2; Length 134;  
 Best Local Similarity 100.0%; Pred. No. 1.4e-16;  
 Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRDSHKIDNYLKLKCR 220  
 |||||||  
 Db 104 YNLHCLRDSHKIDNYLKLKCR 127

# RESULT 8

A60620  
 prolactin - green sea turtle  
 C:Species: Chelonia mydas (green sea turtle)  
 C:Date: 31-Dec-1993 #sequence\_revision 31-Dec-1993 #text\_change 31-Dec-1993  
 C:Accession: A60620  
 R:Yasuda, A.; Kawachi, H.; Papkoff, H.  
 Gen. Comp. Endocrinol. 80, 363-371, 1990  
 A:Title: The complete amino acid sequence of prolactin from the sea turtle (Chelonia  
 A:Reference number: A60620; MUID:91146884  
 A:Accession: A60620  
 A:Molecule type: protein  
 A:Residues: 1-198 <YAS>  
 A:Note: 55-Leu, 145-Val, 148-Arg, and 171-Met were also found  
 C:Superfamily: prolactin  
 C:Keywords: hormone; pituitary  
 F:4-11,58-173,190-198/Disulfide bonds: #status experimental

Query Match 10.6%; Score 24; DB 1; Length 198;  
 Best Local Similarity 100.0%; Pred. No. 2e-16;  
 Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRDSHKIDNYLKLKCR 220  
 |||||||  
 Db 168 YNLHCLRDSHKIDNYLKLKCR 191

# RESULT 9

A60969  
 prolactin precursor - bullfrog (fragment)  
 C:Species: Rana catesbeiana (bullfrog)  
 C:Date: 31-Dec-1993 #sequence\_revision 31-Dec-1993 #text\_change 07-Apr-1994  
 C:Accession: A60969; A61134  
 R:Takahashi, N.; Yoshitama, K.; Kikuyama, S.; Yamamoto, K.; Kato, Y.  
 J. Mol. Endocrinol. 5, 281-287, 1990  
 A:Title: Molecular cloning and nucleotide sequence analysis of complementary DNA for  
 A:Reference number: A60969; MUID:91144703  
 A:Accession: A60969  
 A:Status: not compared with conceptual translation  
 A:Molecule type: mRNA  
 A:Residues: 1-207 <TAK>  
 R:Yasuda, A.; Yamaguchi, K.; Kobayashi, T.; Yamamoto, K.; Kikuyama, S.; Kawachi, H.  
 Gen. Comp. Endocrinol. 83, 218-226, 1991  
 A:Title: The complete amino acid sequence of prolactin from the bullfrog, Rana catesb  
 A:Reference number: A61134; MUID:92009093  
 A:Accession: A61134  
 A:Molecule type: protein  
 A:Residues: 10-122,124-207 <YAS>  
 C:Superfamily: prolactin  
 C:Keywords: anterior pituitary; hormone  
 F:1-9/Domain: signal sequence (fragment) #status predicted <SIG>  
 F:10-207/Product: prolactin #status predicted <MAT>  
 F:13-20,67-182,199-207/Disulfide bonds: #status predicted

Query Match 10.6%; Score 24; DB 2; Length 207;  
 Best Local Similarity 100.0%; Pred. No. 2e-16;  
 Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 197 YNLLHCLRRDSHKIDNYLKLKCR 220  
 |||||  
 Db 177 YNLLHCLRRDSHKIDNYLKLKCR 200

## RESULT 10

prolactin precursor - turkey  
 A:Accession: A61133  
 C:Species: Meleagris gallopavo (common turkey)  
 C:Date: 10-Mar-1994 #sequence\_revision 07-Apr-1994 #text\_change 11-May-2000  
 C:Accession: A61133; S10170; A61528  
 R:Wong, E.A.; Ferrin, N.H.; Silsby, J.L.; El Halawani, M.E.  
 Gen. Comp. Endocrinol. 83, 18-26, 1991  
 A:Title: Cloning of a turkey prolactin cDNA: expression of prolactin mRNA throughout the  
 A:Reference number: A61133; MUID:91348480  
 A:Accession: A61133  
 A:Molecule type: mRNA  
 A:Residues: 1-155, R, 157-229 <MO2>  
 A:Cross-references: GB:005952; NID:9454094; PIDN:AB60604.1; PID:9454095  
 R:Karatzas, C.N.; Zadworny, D.; Kuhnlein, U.  
 Nucleic Acids Res. 18, 3071, 1990  
 A:Title: Nucleotide sequence of turkey prolactin.  
 A:Reference number: S10170; MUID:90272435  
 A:Accession: S10170  
 A:Molecule type: mRNA  
 A:Residues: 21-229 <KAR>  
 A:Cross-references: EMBL:X51769; NID:964095; PIDN:CAA36071.1; PID:964096  
 R:Corcoran, D.H.; Proudman, J.A.  
 Comp. Biochem. Physiol. B 99, 563-570, 1991  
 A:Title: Isoforms of turkey prolactin: evidence for differences in glycosylation and in  
 A:Reference number: A61528; MUID:92119931  
 A:Accession: A61528  
 A:Molecule type: protein  
 A:Residues: 31-70 <COR>  
 C:Superfamily: prolactin  
 C:Keywords: hormone; pituitary  
 F:1-30/Domain: signal sequence #status predicted <SIG>  
 F:31-229/Product: prolactin #status predicted <MAT>  
 F:34-41,88-204,221-229/Disulfide bonds: #status predicted

Query Match 8.4%; Score 19; DB 2; Length 229;  
 Best Local Similarity 100.0%; Pred. No. 2.6e-11;  
 Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 197 YNLLHCLRRDSHKIDNYLKL 215  
 |||||  
 Db 199 YNLLHCLRRDSHKIDNYLKL 217

## RESULT 11

prolactin precursor - chicken  
 C:Species: Gallus gallus (chicken)  
 C:Date: 31-Dec-1993 #sequence\_revision 31-Dec-1993 #text\_change 16-Jul-1999  
 C:Accession: A60972; A32855  
 R:Henks, M.C.; Alonzi, J.A.; Sharp, P.J.; Sang, H.M.  
 J. Mol. Endocrinol. 2, 21-30, 1989  
 A:Title: Molecular cloning and sequence analysis of putative chicken prolactin cDNA.  
 A:Reference number: A60972; MUID:89351551  
 A:Accession: A60972  
 A:Status: not compared with conceptual translation  
 A:Molecule type: mRNA  
 A:Residues: 1-229 <HAN>  
 R:Watahiki, M.; Tanaka, M.; Masuda, N.; Sugisaki, K.; Yamamoto, M.; Yamakawa, M.; Nagai, J.  
 J. Biol. Chem. 264, 5535-5539, 1989  
 A:Title: Primary structure of chicken pituitary prolactin deduced from the cDNA sequence  
 A:Reference number: A32855; MUID:89174595  
 A:Accession: A32855  
 A:Molecule type: mRNA  
 A:Residues: 1-170, 'H', 172-179, 'S', 181-204, 'H', 206-229 <MAT>  
 A:Cross-references: GB:004614; NID:9212612; PIDN:AAA49040.1; PID:9212613  
 C:Comment: The reason for differences between the two reports above is unclear. prolactin

nce from turkey at each position in which the two references above disagree.  
 C:Superfamily: prolactin  
 F:1-30/Domain: signal sequence #status predicted <SIG>  
 F:31-229/Product: prolactin #status predicted <MAT>  
 F:34-41,88-204,221-229/Disulfide bonds: #status predicted

Query Match 8.4%; Score 19; DB 2; Length 229;  
 Best Local Similarity 100.0%; Pred. No. 2.6e-11;  
 Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 197 YNLLHCLRRDSHKIDNYLKL 215  
 |||||  
 Db 199 YNLLHCLRRDSHKIDNYLKL 217

## RESULT 12

prolactin precursor - cat  
 C:Species: Felis silvestris catus (domestic cat)  
 C:Date: 10-Apr-1996 #sequence\_revision 24-May-1996 #text\_change 16-Jul-1999  
 C:Accession: JC4631  
 R:Warren, W.C.; Bentle, K.A.; Bogosian, G.  
 Gene 168, 247-249, 1996  
 A:Title: Cloning of the cDNAs coding for cat growth hormone and prolactin.  
 A:Reference number: JC4631; MUID:96194906  
 A:Accession: JC4631  
 A:Molecule type: mRNA  
 A:Residues: 1-229 <MAR>  
 A:Cross-references: GB:025974; NID:9825770; PIDN:AAA67295.1; PID:9825771  
 A:Experimental source: pituitary  
 C:Genetics:  
 A:Gene: prl  
 C:Superfamily: prolactin  
 C:Keywords: glycoprotein; pituitary  
 F:1-30/Domain: signal sequence #status predicted <SIG>  
 F:31-229/Product: prolactin #status predicted <MAT>  
 F:61/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 7.5%; Score 17; DB 2; Length 229;  
 Best Local Similarity 100.0%; Pred. No. 2.7e-09;  
 Matches 17; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 75 GGGFTKAINSCHTSSL 91  
 |||||  
 Db 77 GGGFTKAINSCHTSSL 93

## RESULT 13

prolactin - sei whale  
 C:Species: Balaenoptera borealis (sei whale)  
 C:Date: 07-May-1993 #sequence\_revision 07-May-1993 #text\_change 07-May-1999  
 C:Accession: PN0128  
 R:Karaseva, L.I.; Pankov, Y.A.  
 Biokhimiia 50, 1528-1534, 1985  
 A:Title: Primary structure of sei whale prolactin.  
 A:Reference number: PN0128; MUID:86026530  
 A:Accession: PN0128  
 A:Molecule type: protein  
 A:Residues: 1-199 <KAR>  
 A:Note: article in Russian with English abstract  
 C:Superfamily: prolactin  
 C:Keywords: anterior pituitary; hormone; lactation; placenta  
 F:4-11,58-174,191-199/Disulfide bonds: #status predicted

Query Match 7.0%; Score 16; DB 2; Length 199;  
 Best Local Similarity 100.0%; Pred. No. 2.4e-08;  
 Matches 16; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 122 PLVHLVTEVNGMDAP 137

Db 94 PLYHLVTEVRGMQEAP 109

## RESULT 14

LCRT

prolactin precursor - rat

C:Species: Rattus norvegicus (Norway rat)

C:Date: 31-Aug-1980 #sequence\_revision 22-May-1981 #text\_change 21-Jul-2000

C:Accession: A93279; A93288; A90419; A49199; I55216; S19295; A01506

R:Coake, N.E.; Baxter, J.D.

Nature 297, 603-606, 1982.

A:Title: Structural analysis of the prolactin gene suggests a separate origin for its 5'

A:Reference number: A93279; MUID:82220023

A:Accession: A93279

A:Molecule type: DNA

A:Residues: 1-226 &lt;COO&gt;

A:Cross-references: GB:J00764; NID:g206360; PIDN:AAA41936.1; PID:g206362

R:Gubbins, E.U.; Maurer, R.A.; Lagrimini, M.; Erwin, C.R.; Donelson, J.E.

J. Biol. Chem. 255, 8655-8662, 1980

A:Title: Structure of the rat prolactin gene.

A:Reference number: A92288; MUID:81006910

A:Accession: A92288

A:Molecule type: mRNA

A:Residues: 1-226 &lt;GUB&gt;

A:Cross-references: GB:J00769; NID:g206371; PIDN:AAA41939.1; PID:g206373

R:McKean, D.J.; Maurer, R.A.

Biochemistry 17, 5215-5219, 1978

A:Title: Complete amino acid sequence of the precursor region of rat prolactin.

A:Reference number: A90419; MUID:79082781

A:Accession: A90419

A:Molecule type: protein

A:Residues: 1-29 &lt;MCK&gt;

R:Shome, B.; Parlow, A.F.

unpublished results, cited by Shome, B., and Parlow, A.F., J. Clin. Endocrinol. Metab. 4

A:Reference number: A94486

A:Contents: annotation; sequence of the active hormone

A:Note: This sequence corresponds to the sequence above beginning at position 30 but dif

R:Wilson III, D.M.; Emanuele, N.V.; Jurgens, J.R.; Kelley, M.R.

Endocrinology 131, 2488-2490, 1992

A:Title: Prolactin message in brain and pituitary of adult male rats is identical: PCR c

A:Reference number: A49199; MUID:93048998

A:Accession: A49199

A:Molecule type: mRNA

A:Residues: 28-161, 'G', 163-221 &lt;WIL&gt;

A:Experimental source: hypothalamus

A:Note: sequence extracted from NCBI backbone (NCBIN:117014, NCBIIP:117015)

R:Coake, N.E.; Coit, D.C.; Weiner, R.I.; Baxter, J.D.; Martial, J.A.

J. Biol. Chem. 255, 6502-6510, 1980

A:Title: Structure of cloned DNA complementary to rat prolactin messenger RNA.

A:Reference number: I55216; MUID:80227789

A:Accession: I55216

A&gt;Status: translated from GB/EMBL/DBJ

A:Molecule type: mRNA

A:Residues: 1-9, 11-161, 'G', 163-226 &lt;RES&gt;

A:Cross-references: GB:J00770; NID:g56540; PIDN:CAA24562.1; PID:g56541

R:Andries, M.; Tillemans, D.; Deneef, C.

Biochem. J. 281, 393-400, 1992

A:Title: Isolation of cleaved prolactin variants that stimulate DNA synthesis in speci

A:Reference number: S19295; MUID:92143803

A:Accession: S19295

A:Molecule type: protein

A:Residues: 30-49, 173-194 &lt;AND&gt;

C:Genetics:

A:Introns: 9/3; 67/3; 103/3; 163/3

C:Superfamily: prolactin

C:Keywords: anterior pituitary; hormone; lactation; placenta

F:1-29/Domain: signal sequence #status experimental &lt;SIG&gt;

F:30-226/Product: prolactin #status predicted &lt;MAT&gt;

F:33-38, 85-201, 218-226/Disulfide bonds: #status predicted

Best Local Similarity 100.0%; Pred. No. 2.9e-06; Matches 14; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 88 TSSLATPEDKEQAO 101

Db 87 TSSLATPEDKEQAO 100

## RESULT 15

LCMS

prolactin precursor - mouse

C:Species: Mus musculus (house mouse)

C:Date: 30-Sep-1987 #sequence\_revision 17-May-1996 #text\_change 28-May-1999

C:Accession: A43789; A23911

R:Harigaya, T.; Nakayama, K.; Okubo, H.; Nakanishi, S.; Seo, H.; Hoshino, K.

Biochim. Biophys. Acta 868, 30-38, 1986

A:Title: Cloning and sequence analysis of cDNA for mouse prolactin.

A:Reference number: A43789; MUID:87000617

A:Accession: A43789

A:Molecule type: mRNA

A:Residues: 1-228 &lt;HAR&gt;

A:Cross-references: GB:X04418

R:Linzer, D.I.H.; Talemantes, F.

J. Biol. Chem. 260, 9574-9579, 1985

A:Title: Nucleotide sequence of mouse prolactin and growth hormone mRNAs and expressi

A:Reference number: A92548; MUID:85261358

A:Accession: A23911

A:Molecule type: mRNA

A:Residues: 3-228 &lt;LIN&gt;

A:Cross-references: GB:X02892; GB:K03236; NID:g53777; PIDN:CAA26651.1; PID:g53778

C:Superfamily: prolactin

C:Keywords: anterior pituitary; hormone; lactation; placenta

F:1-31/Domain: signal sequence #status predicted &lt;SIG&gt;

F:32-228/Product: prolactin #status predicted &lt;PLT&gt;

Query Match 5.7%; Score 13; DB 1; Length 228;  
Best Local Similarity 100.0%; Pred. No. 3e-05;  
Matches 13; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 88 TSSLATPEDKEQAO 100

Db 89 TSSLATPEDKEQAO 101

Search completed: April 25, 2002, 11:08:49  
Job time: 108 sec

Query Match 6.2%; Score 14; DB 1; Length 226;

*This Page Blank (uspto)*

GenCore version 4.5  
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: April 25, 2002, 11:06:26 ; Search time 12.73 Seconds  
(without alignments)  
401.276 Million cell updates/sec

Title: US-09-815-306-1

Perfect score: 227

Sequence: 1 MNKQSPWKGSLLLVSNL.....HKIDNYLKLCRIHNNNC 227

Scoring table: OLIGO  
Gapop 60.0 , Gapext 60.0

Searched: 212252 seqs, 22503292 residues

Word size : 0

Total number of hits satisfying chosen parameters: 212252

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database : Issued\_Patents\_AA:\*  
1: /cgn2\_6/ptodata/2/1aa/5a\_COMB.pep:\*  
2: /cgn2\_6/ptodata/2/1aa/5b\_COMB.pep:\*  
3: /cgn2\_6/ptodata/2/1aa/6a\_COMB.pep:\*  
4: /cgn2\_6/ptodata/2/1aa/6b\_COMB.pep:\*  
5: /cgn2\_6/ptodata/2/1aa/PCTUS\_COMB.pep:\*  
6: /cgn2\_6/ptodata/2/1aa/backfiles1.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	199	87.7	199	3	US-08-737-248-7	Sequence 7, Appli
2	199	87.7	351	1	US-08-196-350-1	Sequence 1, Appli
3	68	30.0	125	3	US-08-985-526-25	Sequence 25, Appli
4	68	30.0	253	3	US-08-985-526-27	Sequence 27, Appli
5	26	11.5	199	3	US-08-737-248-10	Sequence 10, Appli
6	26	11.5	199	3	US-08-737-248-12	Sequence 12, Appli
7	26	11.5	199	3	US-08-737-248-14	Sequence 14, Appli
8	25	11.0	199	3	US-08-737-248-8	Sequence 8, Appli
9	24	10.6	197	3	US-08-737-248-17	Sequence 17, Appli
10	24	10.6	198	3	US-08-737-248-6	Sequence 6, Appli
11	19	8.4	199	3	US-08-737-248-2	Sequence 2, Appli
12	19	8.4	426	3	US-08-737-248-4	Sequence 4, Appli
13	14	6.2	197	3	US-08-737-248-15	Sequence 15, Appli
14	14	5.7	197	3	US-08-737-248-16	Sequence 16, Appli
15	12	5.3	199	3	US-08-737-248-5	Sequence 5, Appli
16	12	5.3	199	3	US-08-737-248-11	Sequence 11, Appli
17	12	5.3	199	3	US-08-737-248-13	Sequence 13, Appli
18	10	4.4	188	3	US-08-737-248-20	Sequence 20, Appli
19	10	4.4	199	3	US-08-737-248-9	Sequence 9, Appli
20	8	3.5	8	2	US-08-669-3848-28	Sequence 28, Appli
21	8	3.5	8	2	US-08-190-964-13	Sequence 13, Appli
22	8	3.5	39	4	US-08-742-4404-13	Sequence 13, Appli
23	8	3.5	42	3	US-09-053-866-5	Sequence 5, Appli
24	8	3.5	177	3	US-08-737-248-21	Sequence 21, Appli
25	8	3.5	187	3	US-08-737-248-19	Sequence 19, Appli
26	8	3.5	187	3	US-08-737-248-18	Sequence 18, Appli
27	7	3.1	30	4	US-09-348-578-5	Sequence 5, Appli

28	7	3.1	31	4	US-09-348-578-14	Sequence 14, Appli
29	7	3.1	32	4	US-09-348-578-23	Sequence 23, Appli
30	7	3.1	207	1	US-07-656-566-2	Sequence 2, Appli
31	7	3.1	231	1	US-07-656-566-3	Sequence 3, Appli
32	7	3.1	301	1	US-08-393-985-12	Sequence 12, Appli
33	7	3.1	347	1	US-08-118-270-47	Sequence 47, Appli
34	7	3.1	347	5	PCT-US93-08528-47	Sequence 47, Appli
35	7	3.1	369	2	US-08-951-148-8	Sequence 8, Appli
36	7	3.1	369	2	US-09-165-234-8	Sequence 8, Appli
37	7	3.1	369	3	US-09-274-570-8	Sequence 8, Appli
38	7	3.1	416	3	US-08-858-876A-4	Sequence 4, Appli
39	7	3.1	416	4	US-09-472-860-4	Sequence 4, Appli
40	7	3.1	480	2	US-08-828-488-8	Sequence 8, Appli
41	7	3.1	884	2	US-08-465-976A-2	Sequence 2, Appli
42	7	3.1	884	2	US-08-982-412-2	Sequence 2, Appli
43	7	3.1	1353	3	US-08-894-173-2	Sequence 2, Appli
44	7	3.1	1353	4	US-09-398-193-2	Sequence 2, Appli
45	6	2.6	8	3	US-08-925-002-45	Sequence 45, Appli

# ALIGNMENTS

RESULT 1:  
US-08-737-248-7  
Sequence 7, Application US/08737248  
Patent No. 6114305

GENERAL INFORMATION:  
APPLICANT: Guemene, Daniel  
APPLICANT: Zadworny, David  
APPLICANT: Karatzas, Costas  
TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR  
TITLE OF INVENTION: TREATING BIRD BROODINESS  
NUMBER OF SEQUENCES: 23  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: WEISER & ASSOCIATES  
STREET: 230 South Fifteenth Street, Suite 500  
CITY: Philadelphia  
STATE: PA  
COUNTRY: USA  
ZIP: 19102

COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patent Release #1.0, Version #1.30

CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/737,248  
FILING DATE: 28-APR-1997  
CLASSIFICATION: 424  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: PCT/FR95/00576  
FILING DATE: 03-MAY-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: FR 94/05550  
FILING DATE: 05-MAY-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Weiser, Gerard J.  
REGISTRATION NUMBER: 19,763  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 215-875-8394  
TELEFAX: 215-875-8394  
INFORMATION FOR SEQ ID NO: 7:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 199 amino acids  
TYPE: amino acid  
STRANDEDNESS:  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-737-248-7

Query Match 87.7%; Score 199; DB 3; Length 199;  
Best Local Similarity 100.0%; Pred. No. 1.2e-166;  
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 29 LPICPGGAARCOVTLRDLFDRAVAVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 88  
DB 1 LPICPGGAARCOVTLRDLFDRAVAVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 60

QY 89 SSLATPEDEKQAOQNMOKFSLIVSLRSWNEPLVHLVTEVRGQEAPEALISKAVEIE 148  
DB 61 SSLATPEDEKQAOQNMOKFSLIVSLRSWNEPLVHLVTEVRGQEAPEALISKAVEIE 120

QY 149 EOTKRLLEGMEILVSVHPEKENEIYPVWSGLPSLOMADEESRLSAYYNLHCLRDSH 208  
DB 121 EOTKRLLEGMEILVSVHPEKENEIYPVWSGLPSLOMADEESRLSAYYNLHCLRDSH 180

QY 209 KIDNYLKLKCRTHHNNC 227  
DB 181 KIDNYLKLKCRTHHNNC 199

RESULT 2  
US-08-196-350-1  
; Sequence 1, Application US/08196350  
; Patent No. 5583099  
; GENERAL INFORMATION:  
; APPLICANT: Richards, Sue  
; APPLICANT: Kaplan, Joanne  
; APPLICANT: Mosicki, Richard  
; TITLE OF INVENTION: PROLACTIN AS ADJUVANT  
; NUMBER OF SEQUENCES: 2  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Brad Salcedo  
; STREET: One Kendall Square  
; CITY: Cambridge  
; STATE: MA  
; COUNTRY: U.S.A.  
; ZIP: 02139  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patentin Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/196.350  
; FILING DATE:  
; CLASSIFICATION: 424  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Goetz, William G  
; REGISTRATION NUMBER: 27,787  
; REFERENCE/DOCKET NUMBER: GEN 4-1.0  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 6172527868  
; TELEFAX: 6173747225  
; INFORMATION FOR SEQ ID NO: 1:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 351 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: peptide  
; ANTI-SENSE: NO  
; FRAGMENT TYPE: N-terminal  
; ORIGINAL SOURCE:  
; ORGANISM: human prolactin  
; US-08-196-350-1

Query Match 87.7%; Score 199; DB 1; Length 351;  
Best Local Similarity 100.0%; Pred. No. 2e-186;  
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 29 LPICPGGAARCOVTLRDLFDRAVAVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 88

DB 153 LPICPGGAARCOVTLRDLFDRAVAVLSHYIHNLSSEMFSEFDKRYTHGRGFTTKAINSCHT 212

QY 89 SSLATPEDEKQAOQNMOKFSLIVSLRSWNEPLVHLVTEVRGQEAPEALISKAVEIE 148  
DB 213 SSLATPEDEKQAOQNMOKFSLIVSLRSWNEPLVHLVTEVRGQEAPEALISKAVEIE 272

QY 149 EOTKRLLEGMEILVSVHPEKENEIYPVWSGLPSLOMADEESRLSAYYNLHCLRDSH 208  
DB 273 EOTKRLLEGMEILVSVHPEKENEIYPVWSGLPSLOMADEESRLSAYYNLHCLRDSH 332

QY 209 KIDNYLKLKCRTHHNNC 227  
DB 333 KIDNYLKLKCRTHHNNC 351

RESULT 3  
US-08-985-526-25  
; Sequence 25, Application US/08985526  
; Patent No. 6080728  
; GENERAL INFORMATION:  
; APPLICANT: Mixson, James A  
; TITLE OF INVENTION: CARRIER DNA COMPLEXES CONTAINING DNA  
; TITLE OF INVENTION: ENCODING ANTI-ANGIOGENIC PEPTIDES AND THEIR USE IN GENE  
; TITLE OF INVENTION: THERAPY  
; NUMBER OF SEQUENCES: 43  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Connolly, Bove, Lodge, & Hutz  
; STREET: 1220 Market Street, P.O. Box 2207  
; CITY: Wilmington  
; STATE: Delaware  
; COUNTRY: U.S.A.  
; ZIP: 19899  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patentin Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/985.526  
; FILING DATE:  
; CLASSIFICATION:  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US 08/608.845  
; FILING DATE: 16-JUL-1996  
; ATTORNEY/AGENT INFORMATION:  
; NAME: McMorrow Jr., Robert G  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (302) 658-9141  
; TELEFAX: (302) 658-5613  
; INFORMATION FOR SEQ ID NO: 25:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 125 amino acids  
; TYPE: amino acid  
; TOPOLOGY: linear  
; US-08-985-526-25

Query Match 30.0%; Score 68; DB 3; Length 125;  
Best Local Similarity 100.0%; Pred. No. 5.6e-59;  
Matches 68; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 70 KRYTHGRGFTTKAINSCHTSLATPEDEKQAOQNMOKFSLIVSLRSWNEPLVHLVTE 129  
DB 43 KRYTHGRGFTTKAINSCHTSLATPEDEKQAOQNMOKFSLIVSLRSWNEPLVHLVTE 102

QY 130 VRGQEAAP 137  
DB 103 VRGQEAAP 110

RESULT 4  
US-08-985-526-27



NAME: Weiser, Gerard J.  
REGISTRATION NUMBER: 19,763  
REFERENCE/DOCKET NUMBER: 989.6411P  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 215-875-8383  
TELEFAX: 215-875-8394  
INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 199 amino acids  
TYPE: amino acid  
STRANDEDNESS:  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-737-248-12

Query Match 11.5%; Score 26; DB 3; Length 199;  
Best Local Similarity 100.0%; Pred. No. 8.6e-18;  
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNHLCLRDHSKIDNYLKLKCR11 222  
|||||  
DB 169 YNHLCLRDHSKIDNYLKLKCR11 194

RESULT 7  
US-08-737-248-14  
Sequence 14, Application US/08737248  
Patent No. 6114305  
GENERAL INFORMATION:  
APPLICANT: Guemene, Daniel  
APPLICANT: Zadworny, David  
APPLICANT: Karatzas, Costas  
TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR  
TREATING BIRD BROODINESS  
NUMBER OF SEQUENCES: 23  
CURRENT APPLICATION DATA:  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: WEISER & ASSOCIATES  
STREET: 230 South Fifteenth Street, Suite 500  
CITY: Philadelphia  
STATE: PA  
COUNTRY: USA  
ZIP: 19102  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patentin Release #1.0, Version #1.30  
APPLICATION NUMBER: US/08/737,248  
FILING DATE: 28-APR-1997  
CLASSIFICATION: 424  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: PCT/FR95/00576  
FILING DATE: 03-MAY-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: FR 94/05550  
FILING DATE: 05-MAY-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Weiser, Gerard J.  
REGISTRATION NUMBER: 19,763  
REFERENCE/DOCKET NUMBER: 989.6411P  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 215-875-8383  
TELEFAX: 215-875-8394  
INFORMATION FOR SEQ ID NO: 14:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 199 amino acids  
TYPE: amino acid  
STRANDEDNESS:  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-737-248-14

Query Match 11.5%; Score 26; DB 3; Length 199;  
Best Local Similarity 100.0%; Pred. No. 8.6e-18;  
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNHLCLRDHSKIDNYLKLKCR11 222  
|||||  
DB 169 YNHLCLRDHSKIDNYLKLKCR11 194

RESULT 8  
US-08-737-248-8  
Sequence 8, Application US/08737248  
Patent No. 6114305  
GENERAL INFORMATION:  
APPLICANT: Guemene, Daniel  
APPLICANT: Zadworny, David  
APPLICANT: Karatzas, Costas  
TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR  
TREATING BIRD BROODINESS  
NUMBER OF SEQUENCES: 23  
CURRENT APPLICATION DATA:  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: WEISER & ASSOCIATES  
STREET: 230 South Fifteenth Street, Suite 500  
CITY: Philadelphia  
STATE: PA  
COUNTRY: USA  
ZIP: 19102  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patentin Release #1.0, Version #1.30  
APPLICATION NUMBER: US/08/737,248  
FILING DATE: 28-APR-1997  
CLASSIFICATION: 424  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: PCT/FR95/00576  
FILING DATE: 03-MAY-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: FR 94/05550  
FILING DATE: 05-MAY-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Weiser, Gerard J.  
REGISTRATION NUMBER: 19,763  
REFERENCE/DOCKET NUMBER: 989.6411P  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 215-875-8383  
TELEFAX: 215-875-8394  
INFORMATION FOR SEQ ID NO: 8:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 199 amino acids  
TYPE: amino acid  
STRANDEDNESS:  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-737-248-8

Query Match 11.0%; Score 25; DB 3; Length 199;  
Best Local Similarity 100.0%; Pred. No. 8.1e-17;  
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNHLCLRDHSKIDNYLKLKCR1 221  
|||||  
DB 169 YNHLCLRDHSKIDNYLKLKCR1 193

RESULT 9  
US-08-737-248-17  
Sequence 17, Application US/08737248



```

: Patent No. 6114305
: GENERAL INFORMATION:
: APPLICANT: Guemene, Daniel
: APPLICANT: Zadworny, David
: APPLICANT: Karatzas, Costas
: TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
: TITLE OF INVENTION: TREATING BIRD BROODINESS
: NUMBER OF SEQUENCES: 23
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: WEISER & ASSOCIATES
: STREET: 230 South Fifteenth Street, Suite 500
: CITY: Philadelphia
: STATE: PA
: COUNTRY: USA
: ZIP: 19102
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: Patentin Release #1.0, Version #1.30
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/08/737,248
: FILING DATE: 28-APR-1997
: CLASSIFICATION: 424
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: PCT/FR95/00576
: FILING DATE: 03-MAY-1995
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: FR 94/05550
: FILING DATE: 05-MAY-1994
: ATTORNEY/AGENT INFORMATION:
: NAME: Weiser, Gerard J.
: REGISTRATION NUMBER: 19,763
: REFERENCE/DOCKET NUMBER: 989,6411P
: TELECOMMUNICATION INFORMATION:
: TELEPHONE: 215-875-8383
: TELEFAX: 215-875-8394
: INFORMATION FOR SEQ ID NO: 17:
: SEQUENCE CHARACTERISTICS:
: LENGTH: 197 amino acids
: TYPE: amino acid
: STRANDEDNESS:
: TOPOLOGY: linear
: MOLECULE TYPE: protein
: US-08-737-248-17

Query Match          10.6%; Score 24; DB 3; Length 197;
Best Local Similarity 100.0%; Pred. No. 7.6e-16;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY      197 YNLHCLRRDSHKIDNYLKLCR 220
      |||||||||||||||||||
Db      167 YNLHCLRRDSHKIDNYLKLCR 190

RESULT 10
US-08-737-248-6
: Sequence 6, Application US/08737248
: Patent No. 6114305
: GENERAL INFORMATION:
: APPLICANT: Guemene, Daniel
: APPLICANT: Zadworny, David
: APPLICANT: Karatzas, Costas
: TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
: TITLE OF INVENTION: TREATING BIRD BROODINESS
: NUMBER OF SEQUENCES: 23
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: WEISER & ASSOCIATES
: STREET: 230 South Fifteenth Street, Suite 500
: CITY: Philadelphia
: STATE: PA
: COUNTRY: USA

```

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ZIP: 19102
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/737,248
FILING DATE: 28-APR-1997
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR95/00576
FILING DATE: 03-MAY-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 94/05550
FILING DATE: 05-MAY-1994
ATTORNEY/AGENT INFORMATION:
NAME: Weiser, Gerard J.
REGISTRATION NUMBER: 19,763
TELECOMMUNICATION INFORMATION:
REFERENCE/DOCKET NUMBER: 989,6411P
TELEPHONE: 215-875-8394
TELEFAX: 215-875-8394
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 198 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-737-248-6

Query Match 10.6% Score 24; DB 3; Length 198;
Best Local Similarity 100.0%; Pred. No. 7.6e-16;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 197 YNLHCLLRDSHKIDNYLKLKR 220
      |||||||||||||||||||
Db 168 YNLHCLLRDSHKIDNYLKLKR 191

RESULT 11
US-08-737-248-2
Sequence 2, Application US/08737248
Patent No. 6114305
GENERAL INFORMATION:
APPLICANT: Guemene, Daniel
APPLICANT: Zadworny, David
APPLICANT: Karatzas, Costas
TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
TITLE OF INVENTION: TREATING BIRD BROODINESS
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: WEISER & ASSOCIATES
STREET: 230 South Fifteenth Street, Suite 500
CITY: Philadelphia
STATE: PA
COUNTRY: USA
ZIP: 19102
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/737,248
FILING DATE: 28-APR-1997
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/FR95/00576
FILING DATE: 03-MAY-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 94/05550
FILING DATE: 05-MAY-1994
ATTORNEY/AGENT INFORMATION:
NAME: Weiser, Gerard J.
REGISTRATION NUMBER: 19,763
TELECOMMUNICATION INFORMATION:
REFERENCE/DOCKET NUMBER: 989,6411P
TELEPHONE: 215-875-8394
TELEFAX: 215-875-8394
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 198 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-737-248-6

```

APPLICATION NUMBER: FR 94/05550  
FILING DATE: 05-MAY-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Weiser, Gerard J.  
REGISTRATION NUMBER: 19,763  
REFERENCE/DOCKET NUMBER: 989,6411P  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 215-875-8394  
TELEFAX: 215-875-8394  
INFORMATION FOR SEQ ID NO: 2:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 199 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-737-248-2

Query Match 8.4%; Score 19; DB 3; Length 199;  
Best Local Similarity 100.0%; Pred. No. 5.8e-11;  
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 VNLHCLRDHSKIDNYLK 215  
DB 169 VNLHCLRDHSKIDNYLK 187

RESULT 12  
US-08-737-248-4  
Sequence 4, Application US/08737248  
Patent No. 6114305  
GENERAL INFORMATION:  
APPLICANT: Guemene, Daniel  
APPLICANT: Zadworny, David  
APPLICANT: Karatzas, Costas  
TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR  
TITLE OF INVENTION: TREATING BIRD BROODINESS  
NUMBER OF SEQUENCES: 23  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: WEISER & ASSOCIATES  
STREET: 230 South Fifteenth Street, Suite 500  
CITY: Philadelphia  
STATE: PA  
COUNTRY: USA  
ZIP: 19102  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.30  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/737,248  
FILING DATE: 28-APR-1997  
CLASSIFICATION: 424  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: PCT/FR95/00576  
FILING DATE: 03-MAY-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: FR 94/05550  
FILING DATE: 05-MAY-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Weiser, Gerard J.  
REGISTRATION NUMBER: 19,763  
REFERENCE/DOCKET NUMBER: 989,6411P  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 215-875-8394  
TELEFAX: 215-875-8394  
INFORMATION FOR SEQ ID NO: 4:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 426 amino acids  
TYPE: amino acid  
TOPOLOGY: linear  
MOLECULE TYPE: protein

US-08-737-248-4

Query Match 8.4%; Score 19; DB 3; Length 426;  
Best Local Similarity 100.0%; Pred. No. 1.2e-10;  
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 VNLHCLRDHSKIDNYLK 215  
DB 396 VNLHCLRDHSKIDNYLK 414

RESULT 13  
US-08-737-248-15  
Sequence 15, Application US/08737248  
Patent No. 6114305  
GENERAL INFORMATION:  
APPLICANT: Guemene, Daniel  
APPLICANT: Zadworny, David  
APPLICANT: Karatzas, Costas  
TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR  
TITLE OF INVENTION: TREATING BIRD BROODINESS  
NUMBER OF SEQUENCES: 23  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: WEISER & ASSOCIATES  
STREET: 230 South Fifteenth Street, Suite 500  
CITY: Philadelphia  
STATE: PA  
COUNTRY: USA  
ZIP: 19102  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.30  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/737,248  
FILING DATE: 28-APR-1997  
CLASSIFICATION: 424  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: PCT/FR95/00576  
FILING DATE: 03-MAY-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: FR 94/05550  
FILING DATE: 05-MAY-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Weiser, Gerard J.  
REGISTRATION NUMBER: 19,763  
REFERENCE/DOCKET NUMBER: 989,6411P  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 215-875-8394  
TELEFAX: 215-875-8394  
INFORMATION FOR SEQ ID NO: 15:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 197 amino acids  
TYPE: amino acid  
STRANDEDNESS:  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-737-248-15

Query Match 6.2%; Score 14; DB 3; Length 197;  
Best Local Similarity 100.0%; Pred. No. 4.4e-06;  
Matches 14; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 88 TSSLATPEDEKEQAO 101  
DB 58 TSSLATPEDEKEQAO 71

RESULT 14  
US-08-737-248-16

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; Sequence 16, Application US/08737248
; Patent No. 6114305
; GENERAL INFORMATION:
; APPLICANT: Guemene, Daniel
; APPLICANT: Zadworny, David
; APPLICANT: Karatzas, Costas
; TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
; TITLE OF INVENTION: TREATING BIRD BROODINESS
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: WEISER & ASSOCIATES
; STREET: 230 South Fifteenth Street, Suite 500
; CITY: Philadelphia
; STATE: PA
; COUNTRY: USA
; ZIP: 19102
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/737,248
; FILING DATE: 28-APR-1997
; CLASSIFICATION: 424
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/FR95/00576
; FILING DATE: 03-MAY-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: FR 94/05550
; FILING DATE: 05-MAY-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Weiser, Gerard J.
; REGISTRATION NUMBER: 19,763
; REFERENCE/DOCKET NUMBER: 989,6411P
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 215-875-8383
; TELEFAX: 215-875-8394
; INFORMATION FOR SEQ ID NO: 16:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 197 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-737-248-16

Query Match      5.7%; Score 13; DB 3; Length 197;
Best Local Similarity 100.0%; Pred. No. 4.1e-05;
Matches 13; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY      88 TSSLATPEDEKEQA 100
      |||
DB      58 TSSLATPEDEKEQA 70

RESULT 15
US-08-737-248-5
; Sequence 5, Application US/08737248
; Patent No. 6114305
; GENERAL INFORMATION:
; APPLICANT: Guemene, Daniel
; APPLICANT: Zadworny, David
; APPLICANT: Karatzas, Costas
; TITLE OF INVENTION: USE OF PROLACTIN FOR PREVENTING AND/OR
; TITLE OF INVENTION: TREATING BIRD BROODINESS
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: WEISER & ASSOCIATES
; STREET: 230 South Fifteenth Street, Suite 500
; CITY: Philadelphia
; STATE: PA
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; COUNTRY: USA
; ZIP: 19102
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/737,248
; FILING DATE: 28-APR-1997
; CLASSIFICATION: 424
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/FR95/00576
; FILING DATE: 03-MAY-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: FR 94/05550
; FILING DATE: 05-MAY-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Weiser, Gerard J.
; REGISTRATION NUMBER: 19,763
; REFERENCE/DOCKET NUMBER: 989,6411P
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 215-875-8383
; TELEFAX: 215-875-8394
; INFORMATION FOR SEQ ID NO: 5:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 199 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-737-248-5

Query Match      5.3%; Score 12; DB 3; Length 199;
Best Local Similarity 100.0%; Pred. No. 0.0004;
Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY      204 RRDShKIDNYLK 215
      |||
DB      176 RRDShKIDNYLK 187
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Job time: 119 sec

**Best Available Copy**

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GenCore version 4.5  
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: April 25, 2002, 11:06:11 ; Search time 23.3 Seconds

(without alignments)  
721.658 Million cell updates/sec

Title: US-09-815-306-1

Perfect score: 227  
Sequence: 1 MNKIGSPMKGSLLLLVSNL.....HKIDVYLKLLCKRIHNNNC 227

Scoring table: OLIGO  
Gapop 60.0 , Gapext 60.0

Searched: 522463 seqs, 74073290 residues

Word size : 0  
Total number of hits satisfying chosen parameters: 522463

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database :

A.Geneseq\_1101:\*

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2: /SIDS8/gcgdata/geneseq/geneseq/AA1981.DAT:\*

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5: /SIDS8/gcgdata/geneseq/geneseq/AA1984.DAT:\*

6: /SIDS8/gcgdata/geneseq/geneseq/AA1985.DAT:\*

7: /SIDS8/gcgdata/geneseq/geneseq/AA1986.DAT:\*

8: /SIDS8/gcgdata/geneseq/geneseq/AA1987.DAT:\*

9: /SIDS8/gcgdata/geneseq/geneseq/AA1988.DAT:\*

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11: /SIDS8/gcgdata/geneseq/geneseq/AA1990.DAT:\*

12: /SIDS8/gcgdata/geneseq/geneseq/AA1991.DAT:\*

13: /SIDS8/gcgdata/geneseq/geneseq/AA1992.DAT:\*

14: /SIDS8/gcgdata/geneseq/geneseq/AA1993.DAT:\*

15: /SIDS8/gcgdata/geneseq/geneseq/AA1994.DAT:\*

16: /SIDS8/gcgdata/geneseq/geneseq/AA1995.DAT:\*

17: /SIDS8/gcgdata/geneseq/geneseq/AA1996.DAT:\*

18: /SIDS8/gcgdata/geneseq/geneseq/AA1997.DAT:\*

19: /SIDS8/gcgdata/geneseq/geneseq/AA1998.DAT:\*

20: /SIDS8/gcgdata/geneseq/geneseq/AA1999.DAT:\*

21: /SIDS8/gcgdata/geneseq/geneseq/AA2000.DAT:\*

22: /SIDS8/gcgdata/geneseq/geneseq/AA2001.DAT:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	227	100.0	227	11	AA05231
2	206	90.7	228	18	AAW23620
3	206	90.7	228	18	AAW23626
4	199	87.7	199	20	AAV11764
5	199	87.7	200	20	AAW22528
6	199	87.7	351	16	AAW78691
7	185	81.5	359	11	AAW05805
8	124	54.6	125	19	AAW40299
9	124	54.6	227	9	AAW82079
10	124	54.6	252	19	AAW40300
11	103	45.4	199	18	AAW23629

12	101	44.5	199	21	AAV78428	Human prolactin am
13	81	35.7	140	20	AAW2260	Human anti-angio
14	81	35.7	143	20	AAW2261	Human anti-angio
15	68	30.0	125	20	AAV06194	Anti-angiogenic pr
16	68	30.0	253	20	AAV06195	Anti-angiogenic pr
17	65	28.6	124	20	AAW2259	Human anti-angio
18	20	8.8	20	18	AAW23639	Human prolactin pe
19	19	8.4	199	16	AAW87090	Turkey prolactin
20	19	8.4	426	16	AAW87091	Turkey prolactin/G
21	16	7.0	20	13	AAW27052	N-terminal prolact
22	14	6.2	19	18	AAW23640	Human prolactin pe
23	14	6.2	193	18	AAW23619	Prolactin antagoni
24	14	6.2	225	9	AAW82078	Recombinant rat pr
25	14	6.2	226	12	AAW14599	Rat prolactin. Ra
26	13	5.7	226	12	AAW13757	Prolactin. Mus mu
27	12	5.3	13	7	AAW60742	Sequence from synt
28	12	5.3	184	8	AAW70504	Cattle recombinant
29	12	5.3	229	11	AAW05699	Preprolactin from
30	11	4.8	11	18	AAW26643	Human prolactin pe
31	11	4.8	11	18	AAW2664	Determinant site o
32	10	4.4	12	10	AAW26004	Human prolactin C-
33	10	4.4	10	18	AAW2664	Human prolactin pe
34	10	4.4	38	18	AAW45040	Immunomodulatory p
35	10	4.4	38	18	AAW45043	Immunomodulatory p
36	10	4.4	38	20	AAW09490	Immunoreactive pepi
37	10	4.4	38	20	AAW09487	Immunoreactive pepi
38	10	4.4	212	11	AAW06893	Tilapia prolactin
39	10	4.4	212	11	AAW08121	Modified tilapia p
40	9	4.0	9	18	AAW23642	Human prolactin pe
41	9	4.0	9	22	AAW80873	Growth hormone pep
42	9	4.0	10	6	AAW50475	Determinant site o
43	9	4.0	20	18	AAW23641	Human prolactin pe
44	8	3.5	8	18	AAW26645	Human prolactin pe
45	8	3.5	8	22	AAW03791	P21-activated prot

#### ALIGNMENTS

RESULT 1

AAW05231

ID AAR05231 standard; protein: 227 AA.

XX

AC AAR05231;

XX

DT 03-AUG-1990 (first entry)

XX

DE AA sequence of human prolactin (HP) as encoded by recombinant DNA.

XX

KW Human prolactin (HP); plasmid pRP100; plasmid pDR720;

KW plasmid pRP100.

XX

OS Homo sapiens.

XX

PN JF02000445-A.

XX

PD 05-JAN-1990.

XX

PF 25-DEC-1987; 87JP-0331244.

XX

PR 25-DEC-1987; 87JP-0331244, JP-315317.

XX

XX (SHIK-) SHIKISHIMA BOSEKI K.

PA WPI: 1990-047987/07.

XX

DR N-PSDB: AAQ93293.

DR

XX Human prolactin producing recombinant DNA -

PT in which promoter, Shine-Dalgarno sequence and translation

PT initiation codon are integrated

XX

PS Disclosure; Fig 1; 15pp; Japanese.

CC Also new are bacteria (E. coli) expressing it which contain its encoding  
CC DNA, and the prodn. of it by their culture. Large amts. of it can be  
CC produced recombinantly.  
XX  
XX Sequence . 227 AA:

Query Match 100.0%; Score 227; DB 11; Length 227;  
Best Local Similarity 100.0%; Pred. No. 6,7e-210;  
Matches 227; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNIKSPWKSGILLIVSNLLCSVAPLPICPGGAACQVTLRDLPRAVVLSHYIHL 60  
DB 1 mnikspwksgillivsnllcsgvaplpicpggaacqvltldlpravvlsyhl 60  
QY 61 SSEMFSEFDKRYTHGRCFTKAINSCHTSSLATPEDEKQAOQMNKDFLSLIVSLRSWN 120  
DB 61 ssemfsefdkrythgrcftkainschsslatpedkeqagmqkdfslivslrsw 120  
QY 121 EPLVHLVTEVRGMQAPPAITLSKAVEIEQTRKRLLEGMLIVSOVHPETKENEIYPWWSG 180  
DB 121 eplvhlvtevrqmgapeaailskaveieeqtrkrllegmellivsqvhpckeneiypwsg 180  
QY 181 LPSLOMADEESRLSAVYNNLHCLRDSDKHIDYKLLKCRITIHNNNC 227  
DB 181 lpslqmadeesrlsavyntlhcltrdskhidykllkcrilhnnnc 227

## RESULT 2

AAW23620  
ID AAW23620 standard; Protein: 228 AA.

AC AAW23620;  
DT 11-FEB-1998 (first entry)

DE Prolactin antagonist (substituted human prolactin).

KW Prolactin antagonist; phosphorylation; hyperprolactinaemia;  
KW prolactinoma; prostate cancer; tumour; T-lymphoma; infertility;  
KW lactation; miscarriage; ovulation; antibody; therapy; human.

OS Homo sapiens.  
OS Synthetic.

XX Key Location/Qualifiers

FT MISC-difference 43 /note= "encoded by ASS"  
FT MISC-difference 63 /note= "encoded by TGA"  
FT MISC-difference 74 /note= "encoded by ASS"  
FT MISC-difference 94 /note= "encoded by ASS"  
FT MISC-difference 152 /note= "encoded by ASS"  
FT MISC-difference 170 /note= "encoded by ASS"  
FT MISC-difference 208 /note= "encoded by ASS"  
FT /label= Asp, Glu, Asn, Tyr, Gln, Ala, Trp, His

PN W09727865-A1.

XX 07-AUG-1997.

XX 30-JAN-1997; 97WO-US01435.

XX 31-JAN-1996; 96US-0594809.

XX (REGC ) UNIV CALIFORNIA.

XX Walker AM;

XX  
XX  
XX

DR WPI: 1997-402308/37.  
DR N-PSDB; AAT74333.

PT Substituted prolactin peptide(s) and proteins having an amino acid  
PT substitution for serine in the C-terminal - useful as prolactin  
PT antagonists, e.g. for treating prolactin dependent cancers

PS Example 13; Fig 18; 158pp; English.

CC This protein comprises human prolactin, substituted at residue 208  
CC (Ser-179 in the native sequence). It can be expressed in bacterial  
CC at eukaryotic host cells using a claimed cDNA sequence (see  
CC AAT74333). Claimed prolactin antagonists (see AAW23608-18) comprise  
CC prolactin substitution mutant proteins and C-terminal peptides in  
CC which the serine residue at position 179 (human) or 177 (rat) is  
CC substituted by another amino acid. They can be used for the  
CC treatment of prolactin dependent cancers and can inhibit T-lymphoma  
CC cell proliferation. They are also useful for treatment of  
CC prolactinoma, infertility related to abnormal prolactin regulation,  
CC some forms of prostatic cancer, miscarriage and ovulation  
CC irregularities, as well as in assays to measure levels of non-  
CC phosphorylated and phosphorylated prolactin as an indicator of  
CC reproductive pathologies and presence or status of a prolactin-  
CC dependent tumour, and to raise polyclonal and monoclonal antibodies.

XX Sequence 228 AA;

Query Match 90.7%; Score 206; DB 18; Length 228;  
Best Local Similarity 100.0%; Pred. No. 9,7e-190;  
Matches 206; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNIKSPWKSGILLIVSNLLCSVAPLPICPGGAACQVTLRDLPRAVVLSHYIHL 60  
DB 2 mnikspwksgillivsnllcsgvaplpicpggaacqvltldlpravvlsyhl 61  
QY 61 SSEMFSEFDKRYTHGRCFTKAINSCHTSSLATPEDEKQAOQMNKDFLSLIVSLRSWN 120  
DB 62 ssemfsefdkrythgrcftkainschsslatpedkeqagmqkdfslivslrsw 121  
QY 121 EPLVHLVTEVRGMQAPPAITLSKAVEIEQTRKRLLEGMLIVSOVHPETKENEIYPWWSG 180  
DB 122 eplvhlvtevrqmgapeaailskaveieeqtrkrllegmellivsqvhpckeneiypwsg 181  
QY 181 LPSLOMADEESRLSAVYNNLHCLRDSD 206  
DB 182 lpslqmadeesrlsavyntlhcltrd 207

## RESULT 3

AAW23626  
ID AAW23626 standard; Protein: 228 AA.

AC AAW23626;

DT 11-FEB-1998 (first entry)

DE Prolactin antagonist (substituted human prolactin).

KW Prolactin antagonist; phosphorylation; hyperprolactinaemia;  
KW prolactinoma; prostate cancer; tumour; T-lymphoma; infertility;  
KW lactation; miscarriage; ovulation; antibody; therapy; human.

OS Homo sapiens.  
OS Synthetic.

XX Key Location/Qualifiers

FT MISC-difference 208 /note= "variable site"

PN W09727865-A1.

XX 07-AUG-1997.



```

XX XX Isolated nucleic acids encoding variants of human prolactin and
PT placental lactogen useful for identifying active domains within those
PT proteins -
XX
XX
PS Claim 7; Fig 2; 86pp; English.
XX
CC This is the amino acid sequence of human prolactin. The invention
CC provides a method for the systematic analysis of the structure and
CC function of polypeptides by identifying active domains which
CC influence the activity of the polypeptide with a target substance,
CC and a method for identifying the active amino acid residues within
CC the active domain of a polypeptide. It also provides polypeptide
CC variants comprising segment-substituted and residue-substituted
CC growth hormones, prolactins and placental lactogens. Claimed
CC variants of human prolactin have 1-19 amino acid substitutions
CC when compared to the wild-type sequence, selected from H59F, F60S,
CC S61E, L63I, A64P, E67S, D68N, K69R, Q71E, A72I, M75K, N76S, Q77N,
CC K78L, D79E, H180D, N184T, Y185F and K185R. These mutations
CC inactivate the active domains and binding sites of the protein.
CC Identifying receptor binding sites in hormones permits the rational
CC design of receptor specific variants. Nucleic acids encoding the
CC variants, expression vectors and host cells are also claimed.
XX
SQ Sequence 199 AA;

```

Query Match 87.7%; Score 199; DB 20; Length 199;  
 Best Local Similarity 100.0%; Pred. No. 4.5e-183;  
 Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```

OY 29 LPICPGAACQVTLRLDFRAVAVLSHYIHNLSSEMFSEFDRYTHGRGFTTKAINSCHT 88
DB 1 lpicpgaacqvtlrlldfravavlsyihnlssmfsefdrkythgrgtfktainscht 60
OY 89 SSLATPEDKBOAOOMNOKDFSLIVSLIRSNMPELVHLVTVRGMQEAPEAIKSKAVEIE 148
DB 61 sslatpedkeqagqmngkdfslivslirsnmpeylvhlvtevrqmgapeaillskaveie 120
OY 149 EOTKRLLGEMELIVSOVHPETKENEIYPVWSGLPSLOMADEBSRLSAVYNLHCLRRDSH 208
DB 121 eqtkrllegmellivsqvhpckenekelypwsqglpslqmadeesrlsavylnlhcrlrrdsh 180
OY 209 KIDNYLKLKCRITIHNNC 227
DB 181 kidnylklklcrilhnnc 199

```

RESULT 5  
 AAM92258  
 ID AAM92258 standard; Protein: 200 AA.  
 XX  
 AC AAM92258;  
 XX  
 DT 08-JUN-1999 (first entry)  
 XX  
 DE Human anti-angiogenic peptide hPRL Met-1Cys199.  
 XX  
 XX Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;  
 KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;  
 KW placental vascularisation; pregnancy; treatment; angiogenic disease;  
 KW tumour; inhibitor; malignant; angiodioma; arteriovenous malformation;  
 KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;  
 KW wound healing; proliferative retinopathy; macular degeneration; trachoma;  
 KW glaucoma; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;  
 KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;  
 KW ulcer; leukemia; reproductive disorder; contraceptive agent;  
 KW gene therapy; pre-eclampsia; intrauterine growth retardation;  
 KW placental dysfunction.  
 XX  
 XX Homo sapiens.  
 OS  
 XX  
 XX MO9851323-A1.  
 PN

```

XX PD 19-NOV-1998.
XX PF 12-MAY-1998; 98WO-US09691.
XX PF 13-MAY-1997; 97US-0046394.
XX
XX (REGC ) UNIV CALIFORNIA.
XX
XX Martial JA, Struman I, Taylor R, Weiner RI;
XX WPI: 1999-045192/04.
XX N-PSID: AAX01694.
XX
XX New anti-angiogenic peptides - comprise N-terminal fragments of
PT human placental lactogen, human growth hormone, growth hormone
PT variant or human prolactin
XX
XX Example 3; Page 43-44; 87pp; English.
XX
CC This invention describes novel human anti-angiogenic peptides derived
CC from 10 to 150 consecutive amino acids selected from the N-terminal end
CC of human placental lactogen (hPL), human growth hormone (hGH), growth
CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC capillary endothelial cell proliferation and organisation (ii) inhibit
CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC least one specific receptor which does not bind an intact full length
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC diagnosing a probable abnormality of placental vascularisation during
CC pregnancy. The peptides can be used for treating an angiogenic disease in
CC a subject, for inhibiting tumour formation or growth in a patient or for
CC modulating vascularisation of a patient's placenta. In particular, the
CC peptides can be used for preventing or treating e.g. malignant tumours,
CC angiodioma, arteriovenous malformation, arthritic such as rheumatoid
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC delayed wound healing, proliferative retinopathy such as diabetic
CC retinopathy, macular degeneration, granulations such as those occurring
CC in haemophilic joints, inappropriate vascularisation in wound healing
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
CC pyogenic glaucoma, retrobleat fibroplasia, scleroderma, solid tumours,
CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
CC leukemia, and reproductive disorders such as follicular and luteal cysts
CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
CC encoding the peptides can be used in gene therapy. The measurement of
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC can be used in assays for impairment of vascular development associated
CC with pre-eclampsia, intrauterine growth retardation, and placental
CC dysfunction.
XX
XX
SQ Sequence 200 AA;

```

Query Match 87.7%; Score 199; DB 20; Length 200;  
 Best Local Similarity 100.0%; Pred. No. 4.5e-183;  
 Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```

OY 29 LPICPGAACQVTLRLDFRAVAVLSHYIHNLSSEMFSEFDRYTHGRGFTTKAINSCHT 88
DB 2 lpicpgaacqvtlrlldfravavlsyihnlssmfsefdrkythgrgtfktainscht 61
OY 89 SSLATPEDKBOAOOMNOKDFSLIVSLIRSNMPELVHLVTVRGMQEAPEAIKSKAVEIE 148
DB 62 sslatpedkeqagqmngkdfslivslirsnmpeylvhlvtevrqmgapeaillskaveie 121
OY 149 EOTKRLLGEMELIVSOVHPETKENEIYPVWSGLPSLOMADEBSRLSAVYNLHCLRRDSH 208
DB 122 eqtkrllegmellivsqvhpckenekelypwsqglpslqmadeesrlsavylnlhcrlrrdsh 181
OY 209 KIDNYLKLKCRITIHNNC 227
DB 182 kidnylklklcrilhnnc 200

```



```

RESULT 6
AA078691
ID AAR78691 standard; Protein: 351 AA.
XX
XX
AC AAR78691;
XX
DT 16-JAN-1996 (first entry)
XX
DE Prolactin.
XX
KM Prolactin: cDNA: vaccine; augment; bacterins; attenuated vaccine;
XX live vaccine; virus; immune response.
XX
OS Homo sapiens.
XX
PN M09521625-A1.
XX
PD 17-AUG-1995.
XX
PF 14-FEB-1995; 95MO-US01866.
XX
PR 14-FEB-1994; 94US-0196350.
XX
PA (GENZ ) GENZYME CORP.
XX
PI Kaplan J, Mosciacki R, Richards S;
XX
DR WPI; 1995-292943/38.
XX
PT Use of prolactin or prolactin cDNA - for enhancing the immune
XX response of an animal to an infectious disease vaccine
XX
PS Claim 4: Page 11-13; 22pp; English.
XX
CC A composition comprising prolactin or prolactin cDNA can be used for
XX enhancing the immune response of an animal to an infectious disease
XX vaccine. The composition can be used to enhance the effectiveness
XX of vaccines which are considered "weak" e.g. bacterins and
XX attenuated live or killed virus products.
XX
SQ Sequence 351 AA;

Query Match 87.7%; Score 199; DB 16; Length 351;
Best Local Similarity 100.0%; Pred. No. 7.5e-183;
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 29 LPTPGGAARQVTLRDLFDBRAVYLSHYIHNLSSEMFSEPDKRTTHGRGFTTKAINSGHT 88
DB 153 lptpggaarcqvtlrdlfdavvlsyihnlsssemfsefdkrythgrgfttkainscht 212
QY 89 SSLATPDEKQAOQONKDFLSIVSLRSWNEPLVHLVTEVRGMOEPAEILSKAVEIE 148
DB 213 sslatpdekeqagmqkdfslslsvslrswneplyhlvtevrqmqeapeilskaveie 272
QY 149 EOTKRLLEGMEILVSQVHPETKENEIYPVWSGLPSLQMADEESRLSAVYNLLHCLLRDSH 208
DB 273 eqtkrllegmelivsqvhpetekeneiypwsglpslqmadeesrlsayynllhcllrds 332
QY 209 KIDNYLKLKCRITIHNNC 227
DB 333 kidnylklkcrithnnnc 351

RESULT 7
AA05805
ID AAR05805 standard; Protein: 359 AA.
XX
XX
AC AAR05805;
XX
XX
DT 13-NOV-1990 (first entry)
XX

```

```

DE DHFR-prolactin fusion gene encoded by plasmid pPRLh4.
XX
XX plasmid pPRLh4; trimethoprim; ampicillin; DHFR; prolactin;
XX dihydrofolate reductase; ds.
XX
OS Synthetic.
XX
PN JP02142479-A.
XX
PD 31-MAY-1990.
XX
PF 24-NOV-1988; 88JP-0296913.
XX
PR 24-NOV-1988; 88JP-0296913.
XX
PA (AGEN ) AGENCY OF IND SCI TECH.
XX
DR WPI; 1990-213062/28.
XX
DR N-PSDB; AA005168.
XX
PT New recombinant plasmid pPRLh4 - can be replicated in escherichia
XX coli and can give trimethoprim and ampicillin resistance to host.
XX
PS Disclosure; ; p; Japanese.
XX
CC Plasmid may be used to transform E.coli to express DHFR-prolactin
XX fusion protein.
XX
SQ Sequence 359 AA;

Query Match 81.5%; Score 185; DB 11; Length 359;
Best Local Similarity 100.0%; Pred. No. 2.1e-169;
Matches 185; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 29 LPTPGGAARQVTLRDLFDBRAVYLSHYIHNLSSEMFSEPDKRTTHGRGFTTKAINSGHT 88
DB 161 lptpggaarcqvtlrdlfdavvlsyihnlsssemfsefdkrythgrgfttkainscht 220
QY 89 SSLATPDEKQAOQONKDFLSIVSLRSWNEPLVHLVTEVRGMOEPAEILSKAVEIE 148
DB 221 sslatpdekeqagmqkdfslslsvslrswneplyhlvtevrqmqeapeilskaveie 280
QY 149 EOTKRLLEGMEILVSQVHPETKENEIYPVWSGLPSLQMADEESRLSAVYNLLHCLLRDSH 208
DB 281 eqtkrllegmelivsqvhpetekeneiypwsglpslqmadeesrlsayynllhcllrds 340
QY 209 KIDNY 213
DB 341 kidny 345

RESULT 8
AA040299
ID AAW40299 standard; Protein: 125 AA.
XX
XX
AC AAW40299;
XX
XX
DT 18-AUG-1998 (first entry)
XX
DE Human prolactin anti-angiogenic protein.
XX
XX Prolactin; anti-angiogenic; cationic vehicle; gene therapy; tumour;
XX liposome; DNA complex; tumour suppressor protein; treatment; neoplastic;
XX metabolic disease.
XX
OS Homo sapiens.
XX
PN EP819758-A2.
XX
PD 21-JAN-1998.
XX
PF 16-JUL-1997; 97EP-0112154.
XX

```

XX 16-JUL-1996; 96US-0680845.  
 XX (MIXS/) MIXSON A J.  
 PA  
 XX  
 PI Mixson AJ;  
 DR WPI: 1998-078839/08.  
 DR N-PSDB: AAV10505.  
 XX  
 PT Complexes of DNA encoding anti-angiogenic peptide - with cationic  
 PT liposome(s) or cationic polymer, useful for, e.g. gene therapy of  
 PT tumours  
 PS Claim 9; Page 11; 47pp; English.  
 XX  
 CC This sequence represents a fragment of prolactin which is used in a  
 CC method to produce a cationic vehicle consisting of a cationic  
 CC liposome:DNA complex where the DNA encodes an anti-angiogenic peptide or  
 CC tumour suppressor protein. Such complexes are used for treatment of  
 CC neoplastic and metabolic diseases especially for gene therapy of tumours.  
 XX  
 SQ Sequence 125 AA;

Query Match 54.6%; Score 124; DB 19; Length 125;  
 Best Local Similarity 100.0%; Pred. No. 3e-111;  
 Matches 124; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 29 LPICGGAARCOVTLRDLPDRAVVLISHYTHNLSEMFSEFEDKRYTHRGFTIKATNSCHT 88  
 Db 2 Lplcpggagrcqvtldfdfravvlshylnhssemfsefdkrythrgftikatsch 61  
 QY 89 SSLATPEDEKQAQOMNQDFLSLIVSLRSWNEPLYHLVTEVRGQEAPEALISKAVEIE 148  
 Db 62 sSLATPEDEKQAQOMNQDFLSLIVSLRSWNEPLYHLVTEVRGQEAPEALISKAVEIE 121  
 QY 149 EOTK 152  
 Db 122 eqtk 125

RESULT 9  
 AAP82079  
 ID AAP82079 standard; protein: 227 AA.  
 AC AAP82079;  
 XX  
 DT 18-OCT-1990 (first entry)  
 XX  
 DE Human preprolactin gene.  
 XX  
 KW Prolactin; milk; contraceptive; dairy cows; lactation.  
 XX  
 OS Homo sapiens.  
 XX  
 FH Key Location/Qualifiers  
 FT Protein 1..227  
 FT /label=preprolactin  
 FT Protein 29..227  
 FT /label=prolactin  
 XX  
 PN USA725549-A.  
 XX  
 PD 16-FEB-1988.  
 XX  
 PE 23-MAR-1984; 84US-0592714.  
 XX  
 PR 22-SEP-1980; 80US-0189160.  
 PR 23-MAR-1984; 84US-0592714.  
 XX  
 PA (REGC ) UNIVERSITY OF CALIFORNIA.  
 XX

PI Cooke NE, Baxter JD;  
 DR WPI: 1988-070922/10.  
 DR N-PSDB: AAN80115.  
 XX  
 PT DNA coding for prolactin - obtd. by prepn. of reverse transcript  
 PT of mRNA coding for prolactin and inserting into a transfer vector.  
 XX  
 PS Disclosure: ; P; English.  
 XX  
 CC The cDNA encoding the prolactin can be inserted into expression vectors  
 CC for the prodn. of prolactin which can be admin. to dairy cows to  
 CC increase milk yield. The protein can also be used as a female  
 CC contraceptive and to ensure adequate milk prodn. for breast feeding  
 CC mothers. See also AAP82078.  
 XX  
 SQ Sequence 227 AA;

Query Match 54.6%; Score 124; DB 9; Length 227;  
 Best Local Similarity 100.0%; Pred. No. 5e-111;  
 Matches 124; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 104 NOKDFLSLIVSLRSWNEPLYHLVTEVRGQEAPEALISKAVEIEEOTKRLEGMEIIVS 163  
 Db 104 nqkdfslslvslrswneplyhlvtevrqmqeapaliskaveleqtkrllegmellvs 163  
 QY 164 QVHPETKENEIYPRVWSGIPSIQMADESRLSNYYMLCLRDSDKIDNYTKLKCRIT 223  
 Db 164 qvhpelkenelypwpvsglpslqmadeesrlsaaynlhcltrdsdkidnytklkcrilh 223  
 QY 224 NNCC 227  
 Db 224 nncc 227

RESULT 10  
 AAW40300  
 ID AAW40300 standard; protein: 252 AA.  
 AC AAW40300;  
 XX  
 DT 18-AUG-1998 (first entry)  
 XX  
 DE Human concatamerised prolactin anti-angiogenic protein.  
 XX  
 KW Prolactin; anti-angiogenic; cationic vehicle; gene therapy; tumour;  
 KW liposome; DNA complex; tumour suppressor protein; treatment; neoplastic;  
 KW metabolic disease; concatamer.  
 XX  
 OS Homo sapiens.  
 XX  
 OS Synthetic.  
 XX  
 FH Key Location/Qualifiers  
 FT Misc-difference 98 /note="encoded by C"  
 FT Misc-difference 124..126 /note="encoded by ACCGGT"  
 FT Misc-difference 128 /note="encoded by AGA"  
 FT Misc-difference 251..252 /note="encoded by ACC"  
 FT /note="encoded by ACC"  
 XX  
 PN EP819758-A2.  
 XX  
 PD 21-JAN-1998.  
 XX  
 PE 16-JUL-1997; 97EP-0112154.  
 XX  
 PR 16-JUL-1996; 96US-0680845.  
 XX  
 PA (MIXS/) MIXSON A J.  
 XX

PI Mixson AJ;  
 XX  
 DR WPI: 1998-078839/08.  
 DR N-PSDB; AAV10506.  
 XX  
 PT Complexes of DNA encoding anti-angiogenic peptide - with cationic  
 PT liposome(s) or cationic polymer, useful for, e.g. gene therapy of  
 PT tumours  
 PS  
 XX  
 PS Claim 9; Page 12; 47pp; English.  
 XX  
 CC This sequence represents a concatamerised fragment of prolactin which  
 CC is used in a method to produce a cationic vehicle consisting of a  
 CC cationic liposome:DNA complex where the DNA encodes an anti-angiogenic  
 CC peptide or tumour suppressor protein. Such complexes are used for  
 CC treatment of neoplastic and metabolic diseases especially for gene  
 CC therapy of tumours. The prolactin nucleotide sequence given in the  
 CC specification appears to have nucleotides missing and as such does  
 CC not correspond to the protein sequence represented in the  
 CC specification.  
 CC  
 SQ Sequence 252 AA;

Query Match 54.6%; Score 124; DB 19; Length 252;  
 Best Local Similarity 100.0%; Pred. No. 5.5e-11;  
 Matches 124; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 29 LPTCPGAAARCOVTLRDLFDBAVVLSHYIHNLSEMPSEFDRKRYTGRGFTKAINSCHT 88  
 DB 2 LPTCPGAAARCOVTLRDLFDBAVVLSHYIHNLSEMPSEFDRKRYTGRGFTKAINSCHT 61  
 QY 89 SSLATEDEKQAOQNMOKDFLSLIVSLKSNNEPLYHLVTEVRGMOEAPAILSKAVEIE 148  
 DB 62 ssLATPEdkeqagmqmkgdltslivslswneplyhlvtevrqmqeapailskaveie 121  
 QY 149 EQTK 152  
 DB 122 eqtk 125

RESULT 11  
 AAW23629  
 ID AAW23629 standard; Protein: 199 AA.  
 AC AAW23629;  
 XX  
 DT 11-FEB-1998 (first entry)  
 XX  
 DE Human prolactin (Ser-179 substituted).  
 XX  
 KM Prolactin antagonist; phosphorylation; hyperprolactinaemia;  
 KM prolactinoma; prostate cancer; tumour; T-lymphoma; infertility;  
 KM lactation; miscarriage; ovulation; antibody; therapy; human.  
 OS Homo sapiens.  
 OS Synthetic.  
 OS  
 XX  
 FT Key Location/Qualifiers  
 FT MISC-difference 179 /note="variable site"  
 FT  
 XX  
 PN WO9727865-A1.  
 PD 07-AUG-1997.  
 XX  
 PF 30-JAN-1997; 97MO-US01435.  
 XX  
 PR 31-JAN-1996; 96US-0594809.  
 XX  
 PA (REGC ) UNIV CALIFORNIA.  
 XX  
 PI Walker AM;  
 XX

XX  
 DR WPI: 1997-402308/37.  
 XX  
 PT Substituted prolactin peptide(s) and proteins having an amino acid  
 PT substitution for serine in the C-terminal - useful as prolactin  
 PT antagonists, e.g. for treating prolactin dependent cancers  
 XX  
 PS Disclosure; Page 106-107; 158pp; English.  
 XX  
 CC This protein comprises human prolactin, substituted at residue 179  
 CC (Ser in the native sequence). It has prolactin antagonist  
 CC activity, antagonising the stimulation of T lymphoma cell growth in  
 CC the presence of non-phosphorylated prolactin. Claimed prolactin  
 CC antagonists (see AAW23607-18) comprise prolactin substitution mutant  
 CC proteins and C-terminal peptides. The Antagonists can be used for  
 CC the treatment of prolactin dependent cancers and can inhibit  
 CC T-lymphoma cell proliferation. They are also useful for treatment  
 CC of prolactinoma, infertility related to abnormal prolactin  
 CC regulation, some forms of prostatic cancer, miscarriage and  
 CC ovulation irregularities, as well as in assays to measure levels of  
 CC non-phosphorylated and phosphorylated prolactin as an indicator of  
 CC reproductive pathologies and presence or status of a prolactin-  
 CC dependent tumour, and to raise polyclonal and monoclonal antibodies.  
 XX  
 SQ Sequence 199 AA;

Query Match 45.4%; Score 103; DB 18; Length 199;  
 Best Local Similarity 100.0%; Pred. No. 6.5e-91;  
 Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 104 NORDFLSLIVSLKSNNEPLYHLVTEVRGMOEAPAILSKAVEIEQTKRLGMEIIVS 163  
 DB 76 nqdfslslivslkswneplyhlvtevrqmqeapailskaveieqtkrlgmeiivs 135  
 QY 164 QVHPETKENEIIPYWSGLPESLOMADEESRUSATYNNILHCLRD 206  
 DB 136 qvhpelkenelypwsglpslqmadeesrlsaynnilhclrd 178

RESULT 12  
 AAY78428  
 ID AAY78428 standard; Protein: 199 AA.  
 AC AAY78428;  
 XX  
 DT 09-MAY-2000 (first entry)  
 XX  
 DE Human prolactin amino acid sequence.  
 XX  
 KM Human growth hormone; hGH; prolactin; placental lactogen;  
 KM modification; mutagenesis.  
 XX  
 OS Homo sapiens.  
 OS  
 XX  
 PN US6013478-A.  
 PD 11-JAN-2000.  
 XX  
 PF 24-JUN-1998; 98US-0104036.  
 XX  
 PR 26-OCT-1989; 89US-0428066.  
 PR 27-APR-1992; 92US-0875204.  
 PR 13-OCT-1992; 92US-0960227.  
 PR 02-FEB-1994; 94US-0190723.  
 PR 06-JUN-1995; 95US-0483039.  
 PR 30-JUN-1997; 97US-0903398.  
 PR 28-OCT-1988; 88US-0264611.  
 XX  
 PA (GETH ) GENENTECH INC.  
 XX  
 PI Wells JA, Cunningham BC;  
 XX

DR WPI: 2000-159873/14.

XX Recombinant production of variant polypeptides, e.g. growth hormone  
PT variants with altered receptor specificity, using cells transformed  
PT with DNA selected by scanning mutagenesis in at least one peptide  
PT domain

PS Example 2; Fig 2; 83pp; English.

XX The present invention describes the production of a polypeptide variant  
CC (1) comprising segment substituted and residue substituted growth  
CC hormone, prolactin or placental lactogens. The method is particularly  
CC used to produce variants of growth hormone (GH), prolactin or placental  
CC lactogen, but may also be applied to receptors, interferons, and  
CC colony-stimulating factors. A particular application is the production  
CC of human GH variants with altered (decreased or increased) binding  
CC interaction with the somatogenic receptor, i.e. compounds useful as  
CC human GH (ant)agonists and which may have higher potency for stimulating  
CC other human GH receptors, and as standards or tracers in immunoassays  
CC active residues in active domains, including those critical for  
CC interaction with different targets. The present sequence represents a  
CC human prolactin amino acid sequence, which is used in the  
CC exemplification of the present invention.

XX Sequence 199 AA:

Query Match 44.5%; Score 101; DB 21; Length 199;  
Best Local Similarity 100.0%; Pred. No. 5.4e-89;  
Matches 101; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 29 LPIPGCAARQVTLRDLFDRAVYLSHYHNLSSMFSEDFKRYTHGFTKAINSCHT 88  
DB 1 LPIPGGARGCQVLTLDLFDRAVYLshyhlhnlssmfsefkyrthgftkainscht 60

OY 89 SSLATPEKKEQAQOQNMOKDFLSLYILRSNNEPLVTEHGKAT 129  
DB 61 SSLATPEKKEQAQGMNQDFLSLYILRSNNEPLVTEHGKAT 101

RESULT 13

AAW92260  
ID AAW92260 standard; Protein: 140 AA.

AC AAW92260;

DT 08-JUN-1999 (first entry)

XX Human anti-angiogenic peptide 16K hPRL Met-1Pro139.

XX Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;  
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;  
KW placental vascularisation; pregnancy; treatment; angiogenic disease;  
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;  
KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;  
KW wound healing; proliferative retinopathy; macular degeneration; trachoma;  
KW granuloma; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;  
KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;  
KW ulcer; leukemia; reproductive disorder; contraceptive agent;  
KW gene therapy; pre-eclampsia; intrauterine growth retardation;  
KW placental dysfunction.

XX Homo sapiens.

OS W09851323-A1.

PN 19-NOV-1998.

PD 12-MAY-1998; 98WO-US09691.

PR 13-MAY-1997; 97US-0046394.

XX

PA (REGC ) UNIV CALIFORNIA.

PI Martial JA, Struman I, Taylor R, Weiner RI;

XX WPI: 1999-045192/04.

DR N-PSDB: AAX01696.

PT New anti-angiogenic peptides - comprise N-terminal fragments of  
PT human placental lactogen, human growth hormone, growth hormone  
PT variant or human prolactin

PS Example 3; Page 44-45; 87pp; English.

XX This invention describes novel human anti-angiogenic peptides derived  
CC from 10 to 150 consecutive amino acids selected from the N-terminal end  
CC of human placental lactogen (hPL), human growth hormone (hGH), growth  
CC hormone variant (hGH-V), or human prolactin. Such peptides (1) inhibit  
CC capillary endothelial cell proliferation and organisation (11) inhibit  
CC angiogenesis in chick chorioallantoic membrane and (111) binds to at  
CC least one specific receptor which does not bind an intact full length  
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for  
CC diagnosing a probable abnormality of placental vascularisation during  
CC pregnancy. The peptides can be used for treating an angiogenic disease in  
CC a subject, for inhibiting tumour formation or growth in a patient or for  
CC modulating vascularisation of a patient's placenta. In particular, the  
CC peptides can be used for preventing or treating e.g. malignant tumours,  
CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid  
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,  
CC delayed wound healing, proliferative retinopathy such as diabetic  
CC retinopathy, macular degeneration, granulomas such as those occurring  
CC in haemophilic joints, inappropriate vascularisation in wound healing  
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular  
CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,  
CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,  
CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,  
CC leukemia, and reproductive disorders such as follicular and luteal cysts  
CC and choriocarcinoma. They can also be used as contraceptive agents. DNA  
CC encoding the peptides can be used in gene therapy. The measurement of  
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL  
CC can be used in assays for impairment of vascular development associated  
CC with pre-eclampsia, intrauterine growth retardation, and placental  
CC dysfunction.

XX Sequence 140 AA:

Query Match 35.7%; Score 81; DB 20; Length 140;  
Best Local Similarity 100.0%; Pred. No. 6.2e-70;  
Matches 81; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 87 HTSLATPEKKEQAQOQNMOKDFLSLYILRSNNEPLVTEHGKQEAPEALISKAVE 146  
DB 60 HTSLATPEKKEQAQGMNQDFLSLYILRSNNEPLVTEHGKQEAPEALISKAVE 119

OY 147 IEQGTFRLEGMELIVSQVHP 167  
DB 120 IEQGTFRLEGMELIVSQVHP 140

RESULT 14

AAW92261  
ID AAW92261 standard; Protein: 143 AA.

AC AAW92261;

DT 08-JUN-1999 (first entry)

XX Human anti-angiogenic peptide 16K hPRL Met-1Pro142.

XX Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;  
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;  
KW placental vascularisation; pregnancy; treatment; angiogenic disease;  
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;

KM arthritis; atherosclerotic plaques; corneal graft neovascularisation;  
KM wound healing; proliferative retinopathy; macular degeneration; trachoma;  
KM granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;  
KM psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;  
KM ulcer; leukaemia; reproductive disorder; contraceptive agent;  
KM gene therapy; pre-eclampsia; intrauterine growth retardation;  
KM placental dysfunction.  
XX  
XX Homo sapiens.  
XX  
XX W09851323-A1.  
XX  
XX PD 19-NOV-1998.  
XX  
XX PF 12-MAY-1998; 98MO-US09691.  
XX  
XX PR 13-MAY-1997; 97US-0046394.  
XX  
XX (REGC ) UNIV CALIFORNIA.  
XX  
XX PI Martial JA, Struman I, Taylor R, Weiner RI;  
XX  
XX DR WPI: 1999-045192/04.  
XX  
XX DR N-PSDB; AAX01697.  
XX  
XX PT New anti-angiogenic peptides - comprise N-terminal fragments of  
XX human placental lactogen, human growth hormone, growth hormone  
XX variant or human prolactin  
XX  
XX PS Example 3; Page 45; 87pp; English.  
XX  
XX CC This invention describes novel human anti-angiogenic peptides derived  
XX from 10 to 150 consecutive amino acids selected from the N-terminal end  
XX of human placental lactogen (hPL), human growth hormone (hGH), growth  
XX hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit  
XX capillary endothelial cell proliferation and organisation (ii) inhibit  
XX angiogenesis in chick chorioallantoic membrane and (iii) binds to at  
XX least one specific receptor which does not bind an intact full length  
XX hGH, hPL, prolactin or hGH-V. The invention also describes a method for  
XX diagnosing a probable abnormality of placental vascularisation during  
XX pregnancy. The peptides can be used for treating an angiogenic disease in  
XX a subject, for inhibiting tumour formation or growth in a patient or for  
XX modulating vascularisation of a patient's placenta. In particular, the  
XX peptides can be used for preventing or treating e.g. malignant tumours,  
XX angiofibroma, arteriosclerotic malformation, arthritic such as rheumatoid  
XX arthritis, atherosclerotic plaques, corneal graft neovascularisation,  
XX delayed wound healing, proliferative retinopathy such as diabetic  
XX retinopathy, macular degeneration, granulations such as those occurring  
XX in haemophilic joints, inappropriate vascularisation in wound healing  
XX such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular  
XX tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,  
XX pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,  
XX Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,  
XX leukaemia, and reproductive disorders such as follicular and luteal cysts  
XX and choriorachnoidoma. They can also be used as contraceptive agents. DNA  
XX encoding the peptides can be used in gene therapy. The measurement of  
XX abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL  
XX can be used in assays for impairment of vascular development associated  
XX with pre-eclampsia, intrauterine growth retardation, and placental  
XX dysfunction.  
XX  
XX S0 Sequence 143 AA;

Query Match 35.7%; Score 81; DB 20; Length 143;  
Best Local Similarity 100.0%; Pred. No. 6.3e-70;  
Matches 81; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 87 HTSLAPPEDEKQAOQNMKDFLSLIVLSIRSMNEPLYLTVTEVGMQEAPEALISKAVE 146  
Db 60 HTSLAPPEDEKQAOQNMKDFLSLIVLSIRSMNEPLYLTVTEVGMQEAPEALISKAVE 119  
QY 147 IEEQTKRLLEGMEILVSOVHP 167

Db 120 IEEQTKRLLEGMEILVSOVHP 140  
RESULT 15  
AAY06194  
ID AAY06194 standard; Protein; 125 AA.  
XX  
XX AC AAY06194;  
XX  
XX DT 16-AUG-1999 (first entry)  
XX  
XX DE Anti-angiogenic prolactin peptide.  
XX  
XX KM Anti-angiogenic; carrier:DNA complex; tumour; gene therapy; human;  
XX KM prolactin; melanoma; lung cancer; colon cancer; brain cancer;  
XX KM breast cancer.  
XX  
XX OS Homo sapiens.  
XX  
XX FH Key Location/Qualifiers  
FH  
FT Misc-difference 42 /note= "encoded by GAT"  
FT  
FT Misc-difference 111 /note= "encoded by GAG"  
FT  
XX EP921193-A1.  
XX  
XX PD 09-JUN-1999.  
XX  
XX PF 07-JAN-1998; 98EP-0100135.  
XX  
XX PR 05-DEC-1997; 97US-0985526.  
XX  
XX PA (MIXS/) MIXSON A J.  
XX  
XX PI Mixson AJ;  
XX  
XX DR WPI: 1999-315406/27.  
XX  
XX DR N-PSDB; AAX58737.  
XX  
XX PT Inhibition of growth of solid tumors  
XX  
XX PS Disclosure; Page 30; 46pp; English.  
XX  
XX CC The present sequence represents an anti-angiogenic prolactin  
XX peptide. The invention provides a carrier:DNA complex that comprises  
XX DNA (see AAX58725-42) encoding an anti-angiogenic protein or peptide,  
XX such as the present sequence, the complex being deliverable to  
XX the site of a tumour in vivo, and additionally comprises regulatory  
XX elements for expressing the anti-angiogenic DNA in a tumour or  
XX tumour vasculature. The complex may also include DNA encoding a  
XX tumour suppressor protein, especially p53. The carrier is a  
XX liposome, cationic polymer, micelle, microsphere, virus, viral  
XX component, or a combination of these, and administration is by  
XX intravenous or intra-tumoral injection. The complexes are useful in  
XX gene therapy for inhibition of tumour growth. The types of tumors  
XX which may be treated include solid tumors such as melanomas and  
XX tumors in the lung, colon, brain and breast.  
XX  
XX S0 Sequence 125 AA;

Query Match 30.0%; Score 68; DB 20; Length 125;  
Best Local Similarity 100.0%; Pred. No. 1.7e-57;  
Matches 68; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 70 KRYTGRGFTIKAINSCHTSSLPAPPEDEKQAOQNMKDFLSLIVLSIRSMNEPLYLTVTE 129  
Db 43 KRYTGRGFTIKAINSCHTSSLPAPPEDEKQAOQNMKDFLSLIVLSIRSMNEPLYLTVTE 102  
QY 130 VRGQOAP 137

Fri Apr 26 09:18:07 2002

us-09-815-306-1.oligo.rag

Page 10

Db 103 virgmgcap 110

Search completed: April 25, 2002, 11:08:06  
Job time: 115 sec

GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: April 25, 2002, 11:03:55 ; Search time 23.48 Seconds

(without alignments)  
1414.132 Million cell updates/sec

Title: US-09-815-306-1

Perfect score: 1185  
Sequence: 1 MNKIGSPMKAGSLLLVSNL.....HKIDNYLKLKCRRIHNNNC 227

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 473505 seqs, 146272329 residues

Total number of hits satisfying chosen parameters: 473505

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPTREMBL\_17:\*  
1: sp\_archaea:\*  
2: sp\_bacteria:\*  
3: sp\_fungi:\*  
4: sp\_human:\*  
5: sp\_invertebrate:\*  
6: sp\_mammal:\*  
7: sp\_mhc:\*  
8: sp\_organelle:\*  
9: sp\_phage:\*  
10: sp\_plant:\*  
11: sp\_rodent:\*  
12: sp\_virus:\*  
13: sp\_vertebrate:\*  
14: sp\_unclassified:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	1174.5	99.1	228	4 Q9NUH9	Q9nuh9 homo sapien
2	1014	85.6	199	6 Q9TS41	Q9ts41 papio (babo
3	805	67.9	229	13 Q9DEI3	Q9dei3 gallus galli
4	747	63.0	225	11 Q9QZL1	Q9qzl1 microtus mo
5	716	60.4	227	11 Q9CPQ0	Q9cpq0 mus musculu
6	705.5	59.5	228	11 Q9CPQ2	Q9cpq2 mus musculu
7	702.5	59.3	228	11 Q9CYL8	Q9cyl8 mus musculu
8	702	59.2	227	11 Q9CYL2	Q9cyl2 mus musculu
9	514	43.4	161	11 Q63293	Q63293 rattus norv
10	489.5	41.3	236	6 Q77687	Q77687 ovis aries
11	465	39.2	228	11 Q9JHK0	Q9jhk0 mus musculu
12	464	39.2	228	11 Q9JIO5	Q9jio5 mus musculu
13	463.5	39.1	227	11 Q9CQR8	Q9cqr8 mus musculu
14	456	38.5	230	11 Q35257	Q35257 mus musculu
15	448.5	37.8	251	11 Q9DAI1	Q9dai1 mus musculu
16	424	35.8	228	11 Q9JIK3	Q9jik3 rattus norv
17	414.5	35.0	229	11 Q63435	Q63435 rattus norv
18	413.5	34.9	251	11 Q9CRB5	Q9crb5 mus musculu
19	409	34.5	237	6 Q28135	Q28135 bos taurus

20	407.5	34.4	243	11 Q9DAY8	Q9day8 mus musculu
21	400.5	33.8	244	11 P70231	P70231 mus musculu
22	399.5	33.7	245	11 Q9R005	Q9r005 rattus norv
23	394	33.2	227	11 Q9JII4	Q9jii4 rattus norv
24	392.5	33.1	227	11 Q35256	Q35256 mus musculu
25	382	32.2	228	11 Q9JIK9	Q9jik9 rattus norv
26	378	31.9	228	11 Q9JIK9	Q9jik9 rattus norv
27	374.5	31.6	230	11 Q9JII2	Q9jii2 mus musculu
28	362	30.5	222	11 Q9JLV9	Q9jlv9 mus musculu
29	355	30.0	156	6 Q97752	Q97752 bos taurus
30	353.5	29.8	240	11 Q9DAV8	Q9dav8 mus musculu
31	352	29.7	228	11 Q9DAV2	Q9dav2 mus musculu
32	348	29.4	220	11 Q9R0S8	Q9r0s8 rattus norv
33	336.5	28.4	241	11 Q9DA54	Q9da54 mus musculu
34	334.5	28.2	228	11 Q9R0R7	Q9r0r7 rattus norv
35	326.5	27.6	239	11 Q63545	Q63545 rattus norv
36	320.5	27.0	240	11 P97786	P97786 rattus norv
37	319	26.9	266	11 Q35334	Q35334 mus musculu
38	318.5	26.9	241	11 Q9C058	Q9c058 mus musculu
39	316	26.7	265	11 Q54830	Q54830 mus musculu
40	314	26.5	211	11 Q9Q0U0	Q9q0u0 rattus norv
41	313	26.4	211	11 Q9R0S7	Q9r0s7 rattus norv
42	308.5	26.0	238	11 Q08627	Q08627 rattus norv
43	308.5	26.0	240	11 Q9DAY2	Q9day2 mus musculu
44	307.5	25.9	103	13 Q9SP58	Q9sp58 xenopus lae
45	307.5	25.9	239	11 Q9R2D1	Q9r2d1 rattus norv

## ALIGNMENTS

RESULT	1	PRELIMINARY:	PRT:	228 AA.
ID	Q9NUH9			
AC	Q9NUH9:			
DT	01-OCT-2000 (TREMBLrel. 15, Created)			
DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)			
DT	01-JUN-2001 (TREMBLrel. 17, Last annotation update)			
DE	DJ404K8.1 (PROLACTIN). PRL.			
GN	PRL.			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			
OX	NCBI_Taxid=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RA	Nickerson T.;			
RL	Submitted (Feb-2000) to the EMBL/Genbank/DBJ databases.			
DR	EMBL; AL023883; CAB75684.1; ..			
DR	InterPro; IPR001400; SOMATOTROPIN.			
DR	Pfam; PF00103; hormone; 1.			
DR	PRINTS; PR00836; SOMATOTROPIN.			
DR	PROSITE; PS00266; SOMATOTROPIN_1; 1.			
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.			
SQ	SEQUENCE 228 AA: 25947 MW; C592E517CE186E42 CRC64;			

Query Match 99.1%; Score 1174.5; DB 4; Length 228;  
Best Local Similarity 99.6%; Pred. No. 1.6e-93;  
Matches 227; Conservative 0; Mismatches 0; Indels 1; Gaps 1;

QY	1	MNKGSPMKAGSLLLVSNL	Q9NUH9	Q9nuh9	homo sapien
DB	1	MNKGSPMKAGSLLLVSNL	Q9TS41	Q9ts41	papio (babo
QY	60	LSSEMSSEFDKRTYRGRGFTKRAINSCHTSSLATPDKDQAOQMNKDFLSVLSLRSM	Q9DEI3	Q9dei3	gallus galli
DB	61	LSSEMSSEFDKRTYRGRGFTKRAINSCHTSSLATPDKDQAOQMNKDFLSVLSLRSM	Q9QZL1	Q9qzl1	microtus mo
QY	120	NEPLYLTVETVRQMOAPEAIIISKAVEIEQTKRLLEGMEIYISQVHPETKENEIYPMWS	Q9CPQ0	Q9cpq0	mus musculu
DB	121	NEPLYLTVETVRQMOAPEAIIISKAVEIEQTKRLLEGMEIYISQVHPETKENEIYPMWS	Q9CPQ2	Q9cpq2	mus musculu

QY 180 GLPQLQMADEESRLSAYVNLHCLRDSDSHKIDNYLKLKCRITHHNNC 227  
 DB 181 GLPQLQMADEESRLSAYVNLHCLRDSDSHKIDNYLKLKCRITHHNNC 228

## RESULT 2

Q9TS41 PRELIMINARY: PRT: 199 AA.  
 AC Q9TS41;  
 DT 01-MAY-2000 (Tremblrel. 13, Created)  
 DT 01-MAY-2000 (Tremblrel. 13, Last sequence update)  
 DE 01-JUN-2001 (Tremblrel. 17, Last annotation update)  
 OS PROLACTIN.  
 OC Papio (baboons).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;  
 OC Cercopithecinae;  
 OC NCBI\_TaxID=9554;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA MEDLINE-92037387; PubMed-1935793;  
 RA Cole E.S., Nichols E.H., Lauziere K., Edmunds T., McPherson J.M.;  
 RT "Characterization of the microheterogeneity of recombinant primate  
 RT prolactin: implications for posttranslational modifications of the  
 RT hormone in vivo.";  
 RL Endocrinology 129:2639-2646(1991).  
 DR HSP: Q28632; IAN3.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
 SQ SEQUENCE 199 AA; 22850 MW; 872A8935FEA43EE67 CRC64;

Query Match 85.6%; Score 1014; DB 6; Length 199;  
 Best Local Similarity 96.5%; Pred. No. 9, 2e-80;

Matches 192; Conservative 5; Mismatches 2; Indels 0; Gaps 0;

QY 29 LPICPGARCOVTLRDLEFDRVAVLSHYIHNLSSEMFSEFDRYTHGKGFITKAINSCHT 88  
 DB 1 LPICPGARCOVTLRDLEFDRVAVLSHYIHNLSSEMFSEFDRYTHGKGFITKAINSCHT 60  
 QY 89 SSLAPPEKEQAQNMNQDFLSLVSILRSWNEPLHLVTEYRGQAEPAILSKAVEIE 148  
 DB 61 SSLAPPEKEQAQNMNQDFLSLVSILRSWNEPLHLVTEYRGQAEPAILSKAVEIE 120  
 QY 149 EOTKRLGEMELIYQVHPETKENTIPYWGSLPSLOMADEESRLSAYVNLHCLRDSDSH 208  
 DB 121 EOTKRLGEMELIYQVHPETKENTIPYWGSLPSLOMADEESRLSAYVNLHCLRDSDSH 180  
 QY 209 KIDNYLKLKCRITHHNNC 227  
 DB 181 KIDNYLKLKCRITHHNNC 199

## RESULT 3

Q9DEI3 PRELIMINARY: PRT: 229 AA.  
 AC Q9DEI3;  
 DT 01-MAR-2001 (Tremblrel. 16, Created)  
 DT 01-MAR-2001 (Tremblrel. 16, Last sequence update)  
 DE 01-JUN-2001 (Tremblrel. 17, Last annotation update)  
 OS PROLACTIN.  
 OC Gallus gallus (Chicken).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 OC Gallus.  
 NCBI\_TaxID=9031;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Ohkubo T., Tanaka M., Nakashima K.;  
 RT "Cloning and characterization of chicken prolactin gene.";

RL Submitted (Feb-1998) to the EMBL/Genbank/DBJ databases.

DR EMBL: AB011438; BAB18728.1; -;  
 DR EMBL: AB011434; BAB18728.1; JOINED.  
 DR EMBL: AB011435; BAB18728.1; JOINED.  
 DR EMBL: AB011436; BAB18728.1; JOINED.  
 DR EMBL: AB011437; BAB18728.1; JOINED.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 SQ SEQUENCE 229 AA; 25863 MW; 11314FEF65F775AE CRC64;

Query Match 67.9%; Score 805; DB 13; Length 229;  
 Best Local Similarity 67.7%; Pred. No. 1, 1e-61;

Matches 155; Conservative 32; Mismatches 40; Indels 2; Gaps 2;

QY 1 MNKSGPMKGSLL-LTLYSNLLC-OSVAPLPICPGARCOVTLRDLEFDRVAVLSHYIH 58  
 DB 1 MSNRGASLKGFLAVLAVLSNTLLTKEGYSLPICIGSYNCVSLGELFDRVAVLSHYIH 60  
 QY 59 NLSSEMFSEFDRYTHGKGFITKAINSCHTSSLATPEDEKQAQNMNQDFLSLVSILRS 118  
 DB 61 YLSSEIFNEFDERYAQGRGFITKAVNGCHTSSLTPPEDEKQAQNIHEDLLNLVGVGLRS 120  
 QY 119 WNEPLHLVTEYRGQAEPAILSKAVEIEEOTKRLGEMELIYQVHPETKENTIPYW 178  
 DB 121 WNDPLHLASEVORIKEDVDITLTKRAVEIEEONKRLGEMELIYGVHSGAGNEIYSHW 180  
 QY 179 SGLPQLQMADEESRLSAYVNLHCLRDSDSHKIDNYLKLKCRITHHNNC 227  
 DB 181 DGLPQLQMADEESRLSAYVNLHCLRDSDSHKIDNYLKLKCRITHHNNC 229

## RESULT 4

Q9QZL1 PRELIMINARY: PRT: 225 AA.  
 AC Q9QZL1;  
 DT 01-MAY-2000 (Tremblrel. 13, Created)  
 DT 01-MAY-2000 (Tremblrel. 13, Last sequence update)  
 DE 01-JUN-2001 (Tremblrel. 17, Last annotation update)  
 OS PROLACTIN.  
 GN PRL.  
 OS Microtus montebelli (Japanese grass vole).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Arvicolinae;  
 OC Microtus.  
 NCBI\_TaxID=79202;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Ohnohshi S., Asami W., Kaneko M., Yoshida S., Yoshida T., Tomogane H.;  
 RT "Sequencing of prolactin cDNA of Japanese field vole.";  
 RT Submitted (AUG-1999) to the EMBL/Genbank/DBJ databases.  
 DR EMBL: AB178933; AAD53180.1; -;  
 DR HSP: Q28632; IAN3.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
 SQ SEQUENCE 225 AA; 25719 MW; 323383E8407085BA CRC64;

Query Match 63.0%; Score 747; DB 11; Length 225;  
 Best Local Similarity 62.6%; Pred. No. 1, 1e-56;

Matches 142; Conservative 36; Mismatches 47; Indels 2; Gaps 1;

QY 1 MNKSGPMKGSLL-LTLYSNLLC-OSVAPLPICPGARCOVTLRDLEFDRVAVLSHYIHN 60  
 DB 1 MTIGSDRKGTLLLVSNLLFCQNVHPLPICHSG--NCQMTIQDELFDRAVIMLSHYIYMM 58  
 QY 61 SSEMFSEFDRYTHGKGFITKAINSCHTSSLATPEDEKQAQNMNQDFLSLVSILRSWN 120



[illegible]

Oy	181	LPSIQMADEBSRLSAYVNLHCLRRDSKIDNYLKLKCRITIHNNC	227
Dd	181	LPSIQGVDEESKILSLRNTICLRDRSHKVDFNFKVLRCQIAHONNC	227
RESULT	6		
ID	QCPCP02	PRELIMINARY;	PRT; 228 AA.
AC	QCPCP02;		
DT	01-JUN-2001	(TREMblrel, 17, Created)	
DT	01-JUN-2001	(TREMblrel, 17, Last sequence update)	
DT	01-JUN-2001	(TREMblrel, 17, Last annotation update)	
DE	PROLACTIN.		
CN	PR.		
OS	Mus musculus (Mouse).		
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;		
CC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.		
OX	NCHI_TaxId=10090;		
RN	[1]		
RP	SEQUENCE FROM N.A.		
RC	STRAIN=C57BL/6J; TISSUE=EMBryo;		
RC	MEDLINE=21085660; PubMed=11217851;		
RA	Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,		
RA	Arikawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,		
RA	Aizawa K., Itawa M., Nishi K., Kiyosawa H., Kondo S., Yamanka I.,		
RA	Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,		
RA	Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,		
RA	Fleischmann W., Gaasterland T., Gissi C., King B., Kochwa H.,		
RA	Kuehl P., Lewis S., Matsuo Y., Nikola D.I., Pesole G., Quackenbush J.,		
RA	Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Mashio T.,		
RA	Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,		
RA	Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,		
RA	Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,		
RA	Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,		
RA	Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,		
RA	Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,		
RA	Sasaki H., Sato K., Schoenbach C., Seya T., Shibata J., Storch K.F.,		
RA	Suzuki H., Toyooka K., Wang K.H., Weitz C., Whitaker C., Wilming L.,		
RA	Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawai H., Kontsuki S.,		
RA	Hayashizaki Y.;		
RT	"Functional annotation of a full-length mouse cDNA collection.";		
RL	Nature 409:685-690(2001).		
DR	EMBL; AK017579; BAB30816.1; -		
DR	EMBL; AK017521; BAB30787.1; -		
DR	MGP; MG1:97762; Prt.		
DR	InterPro; IPRO01400; SOMATOTROPIN.		
DR	Pfam; PF00103; hormone; 1.		
DR	PRINTS; PR00836; SOMATOTROPIN.		
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.		
SO	SEQUENCE 228 AA; 25728 MW; AACADP003728CD77 CnC64;		
Query Match	59.5%; Score 705.5; DB 11; Length 228;		
Best Local Similarity	60.5%; Pred. Misatches 49; Indels 3; Gaps 2;		
Matches 138; Conservative 38; Mismatches 49; Indels 3; Gaps 2;			
Oy	1	MAIKSSPMK-GSLILLVSNLLCGSVAPLPICPGGARGCVTLDPDLDRAVYLSHYTHN	59
Dd	3	MNSOGSAQAAGLLLSLNLLFCNVPLPCISAG--DCQTSRELDREVVALIHYHT	60
Oy	60	LSSEMFSEFDKRYTHGRGITKAINSCHUTSLATEPEDEKEAOQAOMKFLSLIVLSNSM	119
Dd	61	LYTDNFIEDRKDYVDREHMVKVINDCPSSLATPEDEKGAALKVPEVVLNLTLSLVQSS	120
Oy	120	NEPLYHLVTEVRGMODAPEAAILSKAVEIEBQTKRLLEGNELIVSOVHPETKNEYIPWS	179
Dd	121	SDPLPOLITGVGGIOEAPEYIILSRAKIEEONKKOLEGEKIIISOAYBEAKNGCIYFWS	180
Oy	180	GLPSIQMADEBSRLSAYVNLHCLRRDSKIDNYLKLKCRITIHNNC	227
Dd	181	QLPSIQGVDEESKILSLRNTICLRDRSHKVDFNFKVLRCQIAHONNC	228

```

RESULT 7
O9CYL8 PRELIMINARY: PRT: 228 AA.
ID O9CYL8:
AC O9CYL8:
DT 01-JUN-2001 (TREMBlrel. 17, Created)
DT 01-JUN-2001 (TREMBlrel. 17, Last sequence update)
DT 01-JUN-2001 (TREMBlrel. 17, Last annotation update)
DE PROLACTIN.
GN PRL.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=EMBRYO;
RX MEDLINE=21085660; PubMed=11217851;
RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamana K. I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nakai I., Pesole G., Quackenbush J.,
RA Schiml L.M., Staudt F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boftelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bull C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamita M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombeerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Saeki K., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyooka K., Wang K.H., Weltz C., Whitaker C., Wilmink L.,
RA Wyszynski-Boris A., Yoshida K., Hasegawa Y., Kawai H., Kohlski S.,
RA Hayashizaki Y.;
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
DR EMBL: AK017547; BAB30799.1; -
DR MGD: MGI:97762; PRL.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 228 AA; 25756 MW; 40B67042AB89523B CRC64;

Query Match 59.3%; Score 702.5; DB 11; Length 228;
Best Local Similarity 60.1%; Pred. No. 7.4e-53;
Matches 137; Conservative 39; Mismatches 49; Indels 3; Gaps 2;

OY 1 MNKSPMK-GSLLLLVSNLLCSVAPLPICPGGAARCOVTLRDLFRAVYLSHYTHN 59
DB 3 MNSQSAQRKTLILLNLLFCQVNPPLPCSAAG--DCQTSRLRELFVYLSHYTHL 60
OY 60 LSEMFSEFDKRYTHGRGFTIRAINSCHTSLATPEDEKQAOQMNQKDFLSIVSLRSW 119
DB 61 LYTDFIEFDKQYVDREFMKAVINDCPTSLATPEDEKQALKVPEVLLNLLSVSS 120
OY 120 NEPLVLTVEYRGMOAPEALISKAVEITEQTKRLLEGMEILVSVQHPETKENEIYPWS 179
DB 121 SDPLFQLTGVGIDQAPAYILSRAKETEQNKQLEGEVKITISQAYPEAKNGIYFWS 180
OY 180 GLPSLQMADEESRLSAYVNLHLCLRDHSKIDNYIKLKCRITIHNNC 227
DB 181 QLPISQGVDESKILSLRNTIRCLRDHSKVDNFKVLRQCIAHQNNC 228

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DT 01-JUN-2001 (TREMBlrel. 17, Last sequence update)
DT 01-JUN-2001 (TREMBlrel. 17, Last annotation update)
DE PROLACTIN.
GN PRL.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=EMBRYO;
RX MEDLINE=21085660; PubMed=11217851;
RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamana K. I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nakai I., Pesole G., Quackenbush J.,
RA Schiml L.M., Staudt F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boftelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bull C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamita M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombeerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Saeki K., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyooka K., Wang K.H., Weltz C., Whitaker C., Wilmink L.,
RA Wyszynski-Boris A., Yoshida K., Hasegawa Y., Kawai H., Kohlski S.,
RA Hayashizaki Y.;
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
DR EMBL: AK017562; BAB30806.1; -
DR MGD: MGI:97762; PRL.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 227 AA; 25771 MW; F24B1DB8B8989D54 CRC64;

Query Match 59.2%; Score 702; DB 11; Length 227;
Best Local Similarity 59.9%; Pred. No. 8.1e-53;
Matches 136; Conservative 38; Mismatches 51; Indels 2; Gaps 1;

OY 1 MNKSPMKGSLLLLVSNLLCSVAPLPICPGGAARCOVTLRDLFRAVYLSHYTHN 60
DB 3 MNSQSAQRKTLILLNLLFCQVNPPLPCSAAG--DCQTSRLRELFVYLSHYTHL 60
OY 61 SSEMSEFDKRYTHGRGFTIRAINSCHTSLATPEDEKQAOQMNQKDFLSIVSLRSW 120
DB 61 YTFDFIEFDKQYVDREFMKAVINDCPTSLATPEDEKQALKVPEVLLNLLSVSS 120
OY 121 EPIVLTVEYRGMOAPEALISKAVEITEQTKRLLEGMEILVSVQHPETKENEIYPWSG 180
DB 121 DPLFQLTGVGIDQAPAYILSRAKETEQNKQLEGEVKITISQAYPEAKNGIYFWSQ 180
OY 181 LPSLQMADEESRLSAYVNLHLCLRDHSKIDNYIKLKCRITIHNNC 227
DB 181 LPSLQGVDESKILSLRNTIRCLRDHSKVDNFKVLRQCIAHQNNC 227

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RESULT 9
O63293 PRELIMINARY: PRT: 161 AA.
ID O63293:
AC O63293:
DT 01-NOV-1996 (TREMBlrel. 01, Created)
DT 01-NOV-1996 (TREMBlrel. 01, Last sequence update)
DT 01-JUN-2001 (TREMBlrel. 17, Last annotation update)
DE PROLACTIN PRECURSOR (PRL) (FRAGMENT).
GN PRL.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

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OC Mammalia,Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
CX Nchl_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=79179804; PubMed=375200;
RA Gubins E.J., Maurer R.A., Hartley J.L., Donelson J.E.;
RT "Construction and analysis of recombinant DNAs containing a structural
   gene for rat prolactin.";
RL Nucleic Acids Res. 6:915-930(1979).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
   PROMOTING LACTATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR EMBL; V01250; CAZ24563.1; -.
DR HSSP; Q28632; IAN3.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1, 1.
KW Hormone; Parturition; Lactation; Pituitary; Signal.
FT NON_TER 1
FT SIGNAL 1
FT CHAIN 17 >161 PROLACTIN.
FT DISULFID 20 25 BY SIMILARITY.
FT NON_TER 161
SQ SEQUENCE 161 AA; 18228 MM; 0B1E02D9AA91B17F CRC64;

Query Match 43.4%; Score 514; DB 11; Length 161;
Best Local Similarity 60.7%; Pred. NO. 8.2e-37;
Matches 99; Conservative 27; Mismatches 35; Indels 2; Gaps 1;

OY 13 LLLAVSNLLCQSVAPLPCPGARCOVTLRDLDFDRAVVLSHYTHNLSEMFSEFDKRY 72
   |||:||||:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|
DB 1 LLLAMSNLLFCQNGVTLPLVCSSG--DCQTXHXELFDRAVYMLSHYTHLTLDHFIEDKQY 58
   |||:||||:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|

OY 73 THRGCFITKAINSCHTSSLAPDEKDAQOQNMQRKDFLSIVLSKSWEPYLHLYTEVARG 132
   |||:||||:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|
DB 59 VQDFREFIKAINDCPTSSLAPDEKDAQOQVPEVLLNLIISLVHSMWDPFLPOLITGLG 118
   |||:||||:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|

OY 133 MQAPEALISKAVETIEEQTKRLLGEMELIVSVHETKENET 175
   :|||:||||:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|
DB 119 IHEAPDAIISRAKETIEONKRRLLEGIEIKIISQAYPEAKNGETY 161
   :|||:||||:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|

RESULT 10
O77687 PRELIMINARY; PRT; 236 AA.
AC O77687;
DT 01-NOV-1998 (TREMBLrel. 08, Created)
DT 01-NOV-1998 (TREMBLrel. 08, Last sequence update)
DT 01-JUN-2001 (TREMBLrel. 17, Last annotation update)
DE PLACENTAL LACTOGEN PRECURSOR.
GN PL.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RA Liang R., Limesand S.W., Anthony R.V.;
RT "Structure and Transcriptional Regulation of the Ovine Placental
   Lactogen Gene.";
RL Submitted (JUL-1998) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR EMBL; AF079548; AAC31200.1; -.
DR EMBL; AF079545; AAC31200.1; JOINED.
DR EMBL; AF079546; AAC31200.1; JOINED.
DR EMBL; AF079547; AAC31200.1; JOINED.
DR HSSP; Q28632; IAN3.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.

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DR	PRINTS;PRO0836; SOMATOTROPIN.
DR	PROSITE; PS00266; SOMATOTROPIN_1..1.
DR	PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
KW	Hormone; Placenta; Signal.
FT	SIGNAL 1 36 POTENTIAL.
FT	CHAIN 37 236 PLACENTAL LACTOGEN.
SO	SEQUENCE 236 AA; 26709 MM; E7667FEEZFPB0A85 CRC64;
Query Match	41.3%; Score 489.5; DB 6; Length 236; Best Local Similarity 47.2% Pred. No. 1-76-73; Matches 102; Conservative 36; Mismatches 73; Indels 5; Gaps 4;
OY	9 KGS--LILLVSNLLCGSVAP-LPICGGAARCOVTLRDLFDRAVVLSHYIHNSSMF 65 ::        :             :             :         :   :
Dd	18 RGRSLRLLVNNTLCGGQAHPHCYNQPGCKQIPLOSIFDRTATVAANYNSKLAGEMV 77
OY	66 SEFKRYYHGSGFITKANSCHTSTLAFFDEKEDQAQNKNNDPLSIYSILRSNWEPYLX 125 ::           ::               :         :
Dd	78 NRPFEQQYGGINSESKYTIN-CHTSSITTPNSKAKEINTEDIIRFLRYTILLSHWDPELIH 136
OY	126 LVTEVRGMGEAPEALISNAVELEBOTKRLLGMELIVSQVPETRENEIYPWSGLPSIQ 185       : :               :           :
Dd	137 AVTELANSKGSPALLTRAQEIKERAKVLBCVEYIOKRRIPEGK-NPFIYWMSQSSTLT 195
OY	186 MADEESRLSAAYNNLHLCLRDSSHKDIDNYLKLLKCPI 221 
Dd	196 SODENVRRVARAFYRLFCHLRDSKSRTLYTLRLICRL 231
RESULT 11	
O9JHK0	PRELIMINARY; PRT; 228 AA.
ID O9JHK0:	
DT 01-OCT-2000 (TREMBLrel. 15 Created)	
DT 01-OCT-2000 (TREMBLrel. 15 Last sequence update)	
DT 01-JUN-2001 (TREMBLrel. 17, Last annotation update)	
DE PROLACTIN-LIKE PROTEIN M (PROLACTIN LIKE PROTEIN M).	
GN PRPM OR PLP-M.	
OS Mus musculus (Mouse).	
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	
CC Mamalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.	
OX NCBI_TaxId=10090;	
RN [1]	
RP SEQUENCE FROM N.A.	
RX MEDLINE=20365941; PubMed=10906059;	
RA Toft D.J., Linzer D.I.H.;	
RT "Identification of Three Prolactin-Related Hormones as Markers of	
RT Invasive Trophoblasts in the Rat.";	
RL Biol. Reprod. 63:519-525(2000).	
RN [2]	
RP SEQUENCE FROM N.A.	
RA Dai G., Wang D., Liu B., Kasik J.W., Muller H., White R.A., Hummel G.,	
RA Soares M.J.;	
RT "Three Novel Paralogues of the Rodent Prolactin Gene Family."	
RL Submitted (FEB-2000) to the EMBL/Genbank/DDBJ databases.	
RN [3]	
RP SEQUENCE FROM N.A.	
RC STRAIN=C57BL/6J; TISSUE=PLACENTA;	
RX MEDLINE=21085660; Pubmed=11217851;	
RA Kawai Y., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,	
RA Atakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,	
RA Akizawa K., Ikawa M., Nishik K., Kiyoawwa H., Kondo S., Yamanaoka I.,	
RA Saito T., Okazaki Y., Gojibori T., Bono H., Kusaka T., Saito R.,	
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,	
RA Fleischmann W., Gaasterland T., Gliss C., King B., Kochwa H.,	
RA Kuohi P., Lewis S., Matsuo Y., Nakado I., Pesole G., Quackenbush J.,	
RA Schrimf L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Mashio T.,	
RA Sakai K., Okido T., Furuno M., Anon H., Baldarelli R., Barsh G.,	
RA Blake J., Buffelli D., Bojungna N., Carninci P., de Bonaldo M.F.,	
RA Brownstein M.-C., Butz C., Fletcher N.C., Fujita M., Gariboldi M.,	
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamya M., Lee N.H.,	
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombarerts P.,	

RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,  
 RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,  
 RA Suzuki H., Toyooka K., Wang K., Wetz C., Whitaker C., Wilming L.,  
 RA Wyszynski B., Yoshida K., Hasegawa Y., Kawai H., Kohsaki S.,  
 RA Hayashizaki Y.,  
 RT "Functional annotation of a full-length mouse cDNA collection."  
 RL Nature 409:685-690(2001).  
 RP SEQUENCE FROM N.A.  
 RA Ishihashi K., Imai M.,  
 RT "Identification of four new members of the rat prolactin/growth  
 hormone gene family."  
 RL Biochem. Biophys. Res. Commun. 0:0-0(1999).  
 DR EMBL: AF226610; AAF89999.1; -  
 DR EMBL: AF234636; AAF40435.1; -  
 DR EMBL: AK005424; BAB24018.1; -  
 DR EMBL: AB032428; BAB40452.1; -  
 DR MGD: MGI:1861446; P11pm.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 SQ SEQUENCE 228 AA; 25553 MW; 5307F93B013ABD97 CRC64;

Query Match 39.2%; Score 465; DB 11; Length 228;  
 Best Local Similarity 44.2%; Pred. No. 2,1e-32;  
 Matches 96; Conservative 38; Mismatches 83; Indels 0; Gaps 0;

OY 11 SLLLLVSNLLCQSVAPLPICPGCAACQVTLRLDFRAVYLSHYIHLSEMFSEFDK 70  
 DB 12 TLTLVSNLLWSEAVLPICSVRNGCFSEFELERAVLSSEISKKAELFTAFDS 71  
 OY 71 RYTHGCGFTKAINSCHTSSLATPEDEQAQOMKDFSLVSTLRSNNEPLYHLYTEY 130  
 DB 72 OYASHQHLVSKLCKHTSSLDLPKPGSQAMQTHPYTLKLAKSLRAQVPLNHLVNNL 131  
 OY 131 RGMQEAPEALISKAVEIEQTRRLLEGMLIVSQVHPETKENEIYPVMSGLPSLOMADEE 190  
 DB 132 PSLKTVSPSILSKAKEIEKSNGLLEGVKSILQMGNGTDEENYPMGSGLASLSETED 191  
 OY 191 SRLSAVYNLLHCLRDHSKIDVYLKLCRIIHNNC 227  
 DB 192 IRLFAVYNNMIRCEGRDQKVEALMKVCKISNNNC 228

RESULT 12  
 OY105 PRELIMINARY; PRT; 228 AA.  
 AC OY105.  
 DT 01-OCT-2000 (Tremblrel. 15, Created)  
 DT 01-OCT-2000 (Tremblrel. 15, Last sequence update)  
 DT 01-JUN-2001 (Tremblrel. 17, Last annotation update)  
 DE PROLACTIN-LIKE PROTEIN.  
 GN PRPM.  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 OX NCBI\_TaxID=10090;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE-PLACENTA;  
 RL MEDLINE=20381348; PubMed=10922068;  
 RA Tanaka T.S., Jaradat S.A., Lim M.K., Kargul G.J., Wang X.,  
 RA Grahovac M.J., Pantano S., Sano Y., Piao Y., Nagaraja R., Dol H.,  
 RA Wood W.H., III, Becker K.G., Ko M.S.H.,  
 RT "Genome-wide expression profiling of mid-gestation placenta and embryo  
 using a 15,000 mouse developmental cDNA microarray."  
 RL Proc. Natl. Acad. Sci. U.S.A. 97:9127-9132(2000).  
 DR EMBL: AF272368; AAF76230.1; -  
 DR MGD: MGI:1861446; P11pm.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.

DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 SQ SEQUENCE 228 AA; 25540 MW; ABF352DB1A809636 CRC64;

Query Match 39.2%; Score 464; DB 11; Length 228;  
 Best Local Similarity 44.2%; Pred. No. 2,6e-32;  
 Matches 96; Conservative 38; Mismatches 83; Indels 0; Gaps 0;

OY 11 SLLLLVSNLLCQSVAPLPICPGCAACQVTLRLDFRAVYLSHYIHLSEMFSEFDK 70  
 DB 12 TLTLVSNLLWSEAVLPICSVRNGCFSEFELERAVLSSEISKKAELFTAFDS 71  
 OY 71 RYTHGCGFTKAINSCHTSSLATPEDEQAQOMKDFSLVSTLRSNNEPLYHLYTEY 130  
 DB 72 OYASHQHLVSKLCKHTSSLDLPKPGSQAMQTHPYTLKLAKSLRAQVPLNHLVNNL 131  
 OY 131 RGMQEAPEALISKAVEIEQTRRLLEGMLIVSQVHPETKENEIYPVMSGLPSLOMADEE 190  
 DB 132 PSLKTVSPSILSKAKEIEKSNGLLEGVKSILQMGNGTDEENYPMGSGLASLSETED 191  
 OY 191 SRLSAVYNLLHCLRDHSKIDVYLKLCRIIHNNC 227  
 DB 192 IRLFAVYNNMIRCEGRDQKVEALMKVCKISNNNC 228

RESULT 13  
 OY105 PRELIMINARY; PRT; 227 AA.  
 AC OY105.  
 DT 01-JUN-2001 (Tremblrel. 17, Created)  
 DT 01-JUN-2001 (Tremblrel. 17, Last sequence update)  
 DT 01-JUN-2001 (Tremblrel. 17, Last annotation update)  
 DE 160001EILIRIK PROTEIN.  
 GN 160001EILIRIK.  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 OX NCBI\_TaxID=10090;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=PLACENTA;  
 RL MEDLINE=21085660; PubMed=11217851;  
 RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,  
 RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamana K. I.,  
 RA Saito T., Okazaki Y., Gojohori T., Hono H., Kasukawa T., Saito R.,  
 RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,  
 RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,  
 RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,  
 RA Schiraldi L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,  
 RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barish G.,  
 RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,  
 RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,  
 RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,  
 RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,  
 RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,  
 RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,  
 RA Suzuki H., Toyooka K., Wang K.H., Wetz C., Whitaker C., Wilming L.,  
 RA Wyszynski B., Yoshida K., Hasegawa Y., Kawai H., Kohsaki S.,  
 RA Hayashizaki Y.,  
 RT "Functional annotation of a full-length mouse cDNA collection."  
 RL Nature 409:685-690(2001).  
 DR EMBL: AK005567; BAB24127.1; -  
 DR EMBL: AK005474; BAB24064.1; -  
 DR MGD: MGI:1914250; 160001EILIRIK.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone; 1.  
 DR PRINTS: PR00836; SOMATOTROPIN.  
 DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
 SQ SEQUENCE 227 AA; 25687 MW; 64D1A0373E3585F1 CRC64;

Query Match	39.1%	Score 463.5	DB 11	Length 227
Best Local Similarity	39.1%	Pred. No. 2.8e-32		
Matches	88	Conservative	51	Mismatches 85; Indels 1; Gaps 14
OY	3	IKGSWMKSGSLLLLVLSNLCSQVAPLPICPGCAARCOVTLRDLDPRAVVLSHYIHNLS	62	
Db	4	VLSQCSMMFOVLVLSNLLLMENVMSPICFMEGYNETTIEELDSALFMAQVYSNLTY	63	
OY	63	EMFSEFDKRYTHGRCGFTIKAINSCHTSSLATPEDEKQAQNMOKPFLSLIVSLRSWNEP	122	
Db	64	QMSEFDANFVHSLGKYKARNSSNCHTTSLATPASTSEQIQDQTSVDLKLKAVISISRAWYRP	123	
OY	123	LYHLTEVYRGMOEADPAILSKAVEIEEOTKRLLEGMEILVSOVHPETKENETIYPWVGSLP	182	
Db	124	LKQLRALATLEGACKTILKLVIEKFTENOELGELKAILLIVHFGAEEN-VYAAWMGIA	182	
OY	183	SLOWMEESRLSAYVNLHCLFRDSHKIDNYLKLKCRITHNNC	227	
Db	183	DVKSADNWTIRFALSNILHCLDSDTNKVAITYLEALKCRITHNNC	227	
RESULT	14			
ID	035257	PRELIMINARY;	PRF:	230 AA.
AC	035257			
DT	01-JAN-1998	(TREMBLrel. 05, Created)		
DT	01-JAN-1998	(TREMBLrel. 05, Last sequence update)		
DT	01-JUN-2001	(TREMBLrel. 17, Last annotation update)		
DE	PROLACTIN-LIKE PROTEIN B PRECURSOR.			
GN	PLP-B.			
OS	Mus musculus (Mouse).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.			
OX	NCBI_Taxid=10090;			
NP	[1]			
RP	SEQUENCE FROM N.A.			
RA	Muller H., Ishimura R., Orwig K.E., Liu B., Soares M.J.;			
RL	Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.			
RN	[2]			
RP	SEQUENCE FROM N.A.			
RC	STRAIN=C57BL/6J;			
RX	MEDLINE=96049410. PubMed=9389542;			
RA	Lin J., Poole J., Linzer D.I.;			
RT	"Three new members of the mouse prolactin/growth hormone family are			
RL	homologous to proteins expressed in the rat.";			
RN	Endocrinology 138:5541-5549(1997).			
RN	[3]			
RP	SEQUENCE FROM N.A.			
RC	STRAIN=C57BL/6J;			
RA	Lin J., Poole J., Linzer D.I.;			
RL	Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.			
DR	EMBL: AF015563; AAB68825.1; -			
DR	EMBL: AF011384; AAB92400.1; -			
DR	HSSP: Q28632; IAN3.			
DR	MGI: 1206579; Prlpb.			
DR	InterPro: IPR001400; SOMATOTROPIN.			
DR	Pfam: PF00103; hormone; 1.			
DR	PRINTS: PR00836; SOMATOTROPIN.			
KW	Signal.			
FT	SIGNAL	1	29	POTENTIAL.
FT	CHAIN	30	230	PROLACTIN-LIKE PROTEIN-B.
SO	SEQUENCE	230 AA;	26621 MM;	2F0BD63EC7BF0C51 CRC64;
Query Match	38.5%	Score 456;	DB 11;	Length 230;
Best Local Similarity	41.0%	Pred. No. 1.3e-31;		
Matches	91;	Conservative	51;	Mismatches 78; Indels 2; Gaps 14
OY	8	WKGSLLLVLSNLCSQVAPLPICPGCAARCOVTLRDLDPRAVVLSHYIHNLSSEFSE	67	
Db	9	FSGTLMLLASFLMKNAVAPVPMVASDEYGEKMSITDLDLHVITLSHVSSETLAFAMHRI	68	
OY	68	F-DKRYTHGRCGFTIKAINSCHTSSLATPEDEKQAQNMOKPFLSLIVSLRSWNEPLVH	125	

[illegible]

Fri Apr 26 09:18:15 2002

us-09-815-306-1.rspt

Page 8

**Qy** 178 MSGLESLQMADEESRLSAYVNLHCLRPDSHKIDNYLKLCKRIIHNNC 227  
||| ||| : ||| | : || : :::: ||| ||| -  
**Db** 192 WSELSTLOSANEESFFALYKLSYCFLVDTRKEVHYLKILCKRYFPDGYNC 241

Search completed: April 25, 2002, 11:06:55  
Job time: 180 sec

GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: April 25, 2002, 11:07:41 ; Search time 10.82 Seconds

(without alignments)  
769.216 Million cell updates/sec

Title: us-09-815-306-1

Perfect score: 227  
Sequence: 1 MNKGSFPMKGSLLLLVSNL.....HKIDNYLKLKRIHNNNC 227

Scoring table: OLIGO  
Gapop 60.0 , Gapext 60.0

Searched: 100059 seqs, 36664827 residues

Word size: 0

Total number of hits satisfying chosen parameters: 100059

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database: SwissProt\_39:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	227	100.0	227	1	PRL_HUMAN P01236 homo sapien
2	55	24.2	227	1	PRL_MACMU P55151 macaca mula
3	26	11.5	199	1	P23393 camelus dro
4	26	11.5	227	1	PRL_CAMDR Q28632 oryctolagus
5	26	11.5	229	1	PRL_RABIT P21238 sus scrofa
6	25	11.0	193	1	PRL_PIG P29234 mustela vis
7	25	11.0	199	1	PRL_HORSE P12420 equus caball
8	24	10.6	134	1	PRL_BURJA P43001 buto japoni
9	24	10.6	198	1	PRL_CHEMY P33090 cheilonia my
10	24	10.6	228	1	PRL_MONDO O62819 monodelphis
11	24	10.6	228	1	PRL_TRIVU O62781 trichosurus
12	19	8.4	229	1	PRL_MELGA P17572 meleagris g
13	17	7.5	199	1	P55751 alligator m
14	17	7.5	199	1	P55753 crocodylus
15	17	7.5	199	1	P55752 alligator m
16	17	7.5	199	1	P55754 crocodylus
17	17	7.5	229	1	P46403 felis silve
18	16	7.0	199	1	P33089 balaenopter
19	16	6.2	226	1	P01237 rattus norv
20	14	5.7	226	1	P06879 mus musculu
21	13	5.3	229	1	P01239 bos taurus
22	12	5.3	229	1	O28318 capra hircu
23	12	5.3	229	1	PRL_CHICK P16766 gallus gall
24	12	5.3	229	1	PRL_SHEEP P10765 loxodonta a
25	10	4.4	229	1	P09319 oreochromis
26	10	4.4	212	1	P34207 rattus norv
27	10	4.4	223	1	P09320 rattus norv
28	10	4.4	227	1	P09320 rattus norv
29	9	4.0	200	1	P33091 proteolus
30	9	4.0	209	1	P33091 proteolus
31	8	3.5	186	1	P51904 icetalurus p
32	8	3.5	200	1	P09318 oreochromis
33	8	3.5	207	1	P33395 hypophthalm

34	8	3.5	210	1	PRL2_ONCKE	P09584 oncorhynch
35	8	3.5	210	1	PRL_CORAU	P34181 coregonus a
36	8	3.5	210	1	PRL_CYPCA	P09585 cyprinus ca
37	8	3.5	210	1	PRL_HYPNO	P29235 hypophthalm
38	8	3.5	210	1	PRL_ONCMY	P21993 oncorhynch
39	8	3.5	210	1	PRL_SALSA	P48096 salmo salar
40	8	3.5	211	1	PRL_ONCKE	P09583 oncorhynch
41	8	3.5	212	1	PRL_DICLA	P48249 dicentrarch
42	8	3.5	226	1	PRL_MESAU	P37884 mesocricetu
43	8	3.5	236	1	PLI1_BOVIN	P09611 bos taurus
44	8	3.5	238	1	PLI2_BOVIN	P19159 bos taurus
45	7	3.1	108	1	SVS4_MOUSE	P16419 mus musculu

## ALIGNMENTS

RESULT 1	ID	PRL_HUMAN	STANDARD:	PRT:	227 AA.
AC	P01236	Q15199; Q92996;			
DT	21-JUL-1986	(Rel. 01, Created)			
DT	21-JUL-1986	(Rel. 01, Last sequence update)			
DT	20-AUG-2001	(Rel. 40, Last annotation update)			
DE	PROLACTIN PRECURSOR (PRL).				
GN	PRL.				
OS	Homo sapiens (Human).				
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.				
OX	NCBI_TaxId=9606;				
RN	(1)				
RP	SEQUENCE FROM N.A.				
RX	MEDLINE=84182507; PubMed=6325171;				
RA	Truong A.T., Duez C., Belayew A., Renard A., Pictet R.L., Bell G.I.,				
RA	Martial J.A.;				
RT	"Isolation and characterization of the human prolactin gene.";				
RL	EMBO J. 3:429-437(1984).				
RN	(2)				
RP	SEQUENCE FROM N.A.				
RX	MEDLINE=81168179; PubMed=6260780;				
RT	Cooke N.E., Colt D., Shine J., Baxter J.D., Martial J.A.;				
RT	"Human prolactin. cDNA structural analysis and evolutionary				
RL	comparisons.";				
RL	J. Biol. Chem. 256:4007-4016(1981).				
RN	(3)				
RP	SEQUENCE FROM N.A.				
RX	Pubmed=2050267;				
RA	Hirooka Y., Tatsumi K., Shiozawa M., Aiso S., Fukasawa T., Yasuda K.,				
RA	Miyai K.;				
RT	"A placenta-specific 5'non-coding exon of human prolactin.";				
RL	Mol. Cell. Endocrinol. 75:71-80(1990).				
RN	(4)				
RP	SEQUENCE OF 11-227 FROM N.A.				
RX	MEDLINE=84264464; PubMed=6146607;				
RT	Takahashi H., Nabeshima Y., Nabeshima Y., Ogata K., Takeuchi S.;				
RT	"Molecular cloning and nucleotide sequence of DNA complementary to				
RL	human decidual prolactin mRNA.";				
RL	J. Biochem. 95:1491-1499(1984).				
RN	(5)				
RP	SEQUENCE OF 11-201 FROM N.A.				
RC	TISSUE=Breast;				
RC	MEDLINE=97411082; PubMed=9266104;				
RA	Shaw-Bruba C.M., Pirrucciello S.J., Shull J.D.;				
RT	"Expression of the prolactin gene in normal and neoplastic human				
RT	breast tissues and human mammary cell lines: promoter usage and				
RT	alternative mRNA splicing.";				
RL	Breast Cancer Res. Treat. 44:243-253(1997).				
RN	(6)				
RP	SEQUENCE OF 29-227.				
RX	MEDLINE=78046207; PubMed=925136;				
RA	Shome B., Parlow A.F.;				
RT	"Human pituitary prolactin (hPRL): the entire linear amino acid				
RT	sequence.";				

```

RL  J. Clin. Endocrinol. Metab. 45:1112-1115(1977).
RN  [7]
RP  SEQUENCE OF 29-53.
RA  MEDLINE-75151509; PubMed-1126929;
RT  Jacobs J.W., Miall H.D.;
RT  "High sensitivity automated sequence determination of polypeptides.";
RL  J. Biol. Chem. 250:3629-3636(1975).
CC  -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC  PROMOTING LACTATION.
CC  -1- SUBCELLULAR LOCATION: SECRETED.
CC  -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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DR  EMBL; X00540; CAA25214.1; -
DR  EMBL; X00541; CAA25214.1; JOINED.
DR  EMBL; X00543; CAA25214.1; JOINED.
DR  EMBL; X00544; CAA25214.1; JOINED.
DR  EMBL; V00566; CAA23829.1; -
DR  EMBL; M29386; AAA60173.1; -
DR  EMBL; D00411; BAA00312.1; -
DR  EMBL; X54393; CAA38263.1; ALT_FRAME.
DR  EMBL; X54393; CAA38264.1; ALT_FRAME.
DR  EMBL; U75583; AAB70858.1; -
DR  PIR; A90988; LCHU.
DR  HSSP; Q28632; IAN3.
DR  MIM; I76760; -.
DR  InterPro; IPR001400; SOMATOTROPIN.
DR  Pfam; PF00103; hormone; 1.
DR  PRINTS; PR00836; SOMATOTROPIN.
DR  PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR  PROSITE; PS00338; SOMATOTROPIN_2; 1.
KM  Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.
FT  SIGNAL 1 28
FT  CHAIN 29 227
FT  DISULFID 32 39
FT  DISULFID 86 202
FT  DISULFID 219 227
FT  CARBOHYD 59 59
FT  CONFLICT 42 42
FT  CONFLICT 110 111
FT  CONFLICT 113 114
FT  CONFLICT 118 118
FT  CONFLICT 148 148
FT  CONFLICT 172 172
FT  CONFLICT 190 191
FT  CONFLICT 206 206
SQ  SEQUENCE 227 AA; 25876 MW; 952BBA1B6A955527 CRC64;
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Query Match 100.0%; Score 227; DB 1; Length 227;
Best Local Similarity 100.0%; Pred. No. 8, 1e-211;
Matches 227; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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QY  181 LPSLQMADEESRLSAYYNLHCLRDSHKIDNYLKLKCRIRHNNC 227
Db  181 LPSLQMADEESRLSAYYNLHCLRDSHKIDNYLKLKCRIRHNNC 227
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RESULT 2
PRL_MACMU
ID PRL_MACMU STANDARD; PRT; 227 AA.
AC P51511;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DE 01-OCT-1996 (Rel. 34, Last annotation update)
DE PROLACTIN PRECURSOR (PRL).
GN PRL.
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecoidea; Macaca.
OX NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Decidua;
RX MEDLINE-94220570; PubMed-8167226;
RA Brown N.A., Bethea C.L.;
RT "Cloning of decidua prolactin from rhesus macaque.";
RL Biol. Reprod. 50:543-552(1994).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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DR  EMBL; U09018; AAA18471.1; -
DR  HSSP; Q28632; IAN3.
DR  InterPro; IPR001400; SOMATOTROPIN.
DR  Pfam; PF00103; hormone; 1.
DR  PRINTS; PR00836; SOMATOTROPIN.
DR  PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR  PROSITE; PS00338; SOMATOTROPIN_2; 1.
KM  Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.
FT  SIGNAL 1 28
FT  CHAIN 29 227
FT  DISULFID 32 39
FT  DISULFID 86 202
FT  DISULFID 219 227
FT  CARBOHYD 59 59
SQ  SEQUENCE 227 AA; 25972 MW; 1B6B25E087C401E4 CRC64;
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Query Match 24.2%; Score 55; DB 1; Length 227;
Best Local Similarity 100.0%; Pred. No. 1, 9e-45;
Matches 55; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DE PROLACTIN (PRL).
GN PRL.
OS Camelus dromedarius (Dromedary) (Arabian camel).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Tylopoda; Camelidae; Camelus.
OX NCBI_TaxID=9838;
RN [1]
RP SEQUENCE AND CARBOHYDRATE-LINKAGE SITE.
RX MEDLINE=91230144; PubMed=2029533;
RA Marlat N., Huet J.-C., Nespoulos C., Combarous Y.,
RA Pernollet J.-C.;
RT "Determination of the primary and secondary structures of the
RT dromedary (Camelus dromedarius) prolactin and comparison with
RT prolactins from other species.";
RL Biochim. Biophys. Acta 1077:339-345(1991).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR PIR; S15131; S15131.
DR HSSP; Q28632; IAN3.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Parturition; Lactation; Pituitary; Glycoprotein.
FT DISULFID 4 11
FT DISULFID 58 174
FT DISULFID 191 199
FT CARBOHYD 31 31
SQ SEQUENCE 199 AA; 22971 MW; EA38298C4585B19 CRC64;

Query Match 11.5%; Score 26; DB 1; Length 199;
Best Local Similarity 100.0%; Pred. No. 1.3e-17;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 197 YNLHCLRRDSHKIDNYLKLKCR11 222
Db 169 YNLHCLRRDSHKIDNYLKLKCR11 194

RESULT 4
PRL_RABIT STANDARD: PRT; 227 AA.
ID PRL_RABIT
AC Q28632;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 15-JUL-1998 (Rel. 36, Last annotation update)
DE PROLACTIN PRECURSOR (PRL).
GN PRL.
OS Oryctolagus cuniculus (Rabbit).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX NCBI_TaxID=9986;
RN [1]
RP SEQUENCE FROM N.A.
RX STRAIN=NEW ZEALAND WHITE;
RX MEDLINE=96280118; PubMed=8672230;
RA Gabou L., Boissard M., Gourdou I., Jammes M., Dulor J.P., Djiane J.;
RT "Cloning of rabbit prolactin cDNA and prolactin gene expression in
RT the rabbit mammary gland.";
RL J. Mol. Endocrinol. 16:27-37(1996).
RN [2]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=97248733; PubMed=9094747;
RA Halaby D., Thoreau E., Djiane J., Morrison J.P.;
RT "Homology modeling of rabbit prolactin hormone complexed with its
RT receptor.";
RL Proteins 27:459-468(1997).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
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CC -1- SUBCELLULAR LOCATION: SECRETED.
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CC -----
DR EMBL; U27199; AAB17481.1; -.
DR PDB; IAN3; 03-DEC-97.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Parturition; Lactation; Pituitary; Signal; 3D-structure.
FT SIGNAL 1 28
FT CHAIN 29 227
FT DISULFID 32 39
FT DISULFID 86 202
FT DISULFID 219 227
SQ SEQUENCE 227 AA; 25990 MW; 7AB7570F4F7DB048 CRC64;

Query Match 11.5%; Score 26; DB 1; Length 227;
Best Local Similarity 100.0%; Pred. No. 1.4e-17;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 197 YNLHCLRRDSHKIDNYLKLKCR11 222
Db 197 YNLHCLRRDSHKIDNYLKLKCR11 222

RESULT 5
PRL_PIG STANDARD: PRT; 229 AA.
ID PRL_PIG
AC P01238;
DT 21-Jul-1986 (Rel. 01, Created)
DT 01-OCT-1994 (Rel. 30, Last sequence update)
DT 01-FEB-1996 (Rel. 33, Last annotation update)
DE PROLACTIN PRECURSOR (PRL).
GN PRL.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX NCBI_TaxID=9623;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89263739; PubMed=2726463;
RA Schulz Aellen M.F., Schmid E., Moyna R.N.;
RT "Nucleotide sequence of porcine preprolactin cDNA.";
RL Nucleic Acids Res. 17:3295-3295(1989).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=90262633; PubMed=2344390;
RA Kato Y., Hirai T., Kato T.;
RT "Molecular cloning of cDNA for porcine prolactin precursor.";
RL J. Mol. Endocrinol. 4:135-142(1990).
RN [3]
RP SEQUENCE OF 31-229.
RX MEDLINE=76189476; PubMed=1270193;
RA Li C.H.;
RT "Studies on pituitary lactogenic hormone. The primary structure of
RT the porcine hormone.";
RL Int. J. Pept. Protein Res. 8:205-224(1976).
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY
CC PROMOTING LACTATION.
CC -1- SUBCELLULAR LOCATION: SECRETED.
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DR EMBL: X14068; CAA32231.1; -  
DR PIR: A01507; LCPG.  
DR PIR: S04077; S04077.  
DR PIR: A60971; A60971.  
DR HSSP: Q28632; IAN3.  
DR InterPro: IPR001400; SOMATOTROPIN.  
DR Pfam: PF00103; hormone; 1.  
DR PROSITE: PS00836; SOMATOTROPIN.  
DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
KW Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.  
FT SIGNAL 1 30  
FT CHAIN 31 229 PROLACTIN.  
FT DISULFID 34 41  
FT DISULFID 88 204  
FT DISULFID 221 229  
FT CARBOHYD 61 61  
FT CONFLICT 4 4 N-LINKED (GLCNAC. . .) (PARTIAL).  
FT CONFLICT 43 43 V -> T (IN REF. 1).  
FT CONFLICT 152 152 Q -> E (IN REF. 3).  
FT CONFLICT 226 226 D -> N (IN REF. 3).  
SQ SEQUENCE 229 AA; 26141 MW; 9D8507EE6DA3B47 CRC64;

Query Match  
Best Local Similarity 11.5%; Score 26; DB 1; Length 229;  
Matches 26; Conservative 100.0%; Pred. No. 1.4e-17;

OY 197 YNLHCLRRDSHKIDNYLKLKCRIT 222  
Db 199 YNLHCLRRDSHKIDNYLKLKCRIT 224

## RESULT 6

PR\_L\_MUSVI STANDARD; PRT; 193 AA.  
ID PRL\_MUSVI  
AC P29234;  
DT 01-DEC-1992 (Rel. 24, Created)  
DT 01-FEB-1995 (Rel. 31, Last sequence update)  
DT 01-NOV-1997 (Rel. 35, Last annotation update)  
DE PROLACTIN (PRL) (FRAGMENT).  
GN PRL.  
OS Muscula vison (American mink).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Carnivora; Fissipedia; Mustelidae; Mustela.  
OX NCBI\_Taxid=9667;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=94140110; PubMed=8307350;  
RA Pereelygina L.M., Baricheva E.M., Sebeleva T.E., Kokoza V.A.;  
RT "The evolutionarily conserved gene Nc70F, expressed in nerve tissue  
RT of Drosophila melanogaster, encodes a protein homologous to the mouse  
RL GeneLinka 29:1597-1607(1993).  
RN [2]  
RP SEQUENCE OF 19-193 FROM N.A.  
RA TISSUE=Pituitary;  
RC Bondar A.A., Golovin S.J., Mertvelsov N.P.;  
RL Submitted (NOV-1991) to the EMBL/GenBank/DBJ databases.  
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY  
CC PROMOTING LACTATION.  
CC -1- SUBCELLULAR LOCATION: SECRETED.  
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.  
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CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).

DR EMBL: X59785; CAA42447.1; -  
DR EMBL: X63235; CAA44910.1; -  
DR PIR: S18882; S18882.  
DR HSSP: Q28632; IAN3.  
DR InterPro: IPR001400; SOMATOTROPIN.  
DR Pfam: PF00103; hormone; 1.  
DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
KW Hormone; Parturition; Lactation; Pituitary.  
FT NON\_TER 1 1  
FT DISULFID 52 168 BY SIMILARITY.  
FT DISULFID 185 193 BY SIMILARITY.  
FT CONFLICT 40 40 H -> Q (IN REF. 2).  
FT CONFLICT 154 154 E -> D (IN REF. 2).  
FT CONFLICT 190 190 H -> D (IN REF. 2).  
SQ SEQUENCE 193 AA; 22417 MW; 03BDF6102B9DC30 CRC64;

Query Match  
Best Local Similarity 11.0%; Score 25; DB 1; Length 193;  
Matches 25; Conservative 100.0%; Pred. No. 1.1e-16;

OY 197 YNLHCLRRDSHKIDNYLKLKCRIT 221  
Db 163 YNLHCLRRDSHKIDNYLKLKCRIT 187

## RESULT 7

PR\_L\_HORSE STANDARD; PRT; 199 AA.  
ID PRL\_HORSE  
AC P12420;  
DT 01-OCT-1989 (Rel. 12, Created)  
DT 01-OCT-1989 (Rel. 12, Last sequence update)  
DT 01-NOV-1997 (Rel. 35, Last annotation update)  
DE PROLACTIN (PRL).  
GN PRL.  
OS Equus caballus (Horse).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.  
OX NCBI\_Taxid=9796;  
RN [1]  
RP SEQUENCE  
RX MEDLINE=88314465; PubMed=3045032;  
RA Lehman S.R., Lahm H.W., Miedel M.C., Hulmes J.D., Li C.H.;  
RT "Primary structure of equine pituitary prolactin."  
RL Int. J. Pept. Protein Res. 31:544-554(1988).  
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY  
CC PROMOTING LACTATION.  
CC -1- SUBCELLULAR LOCATION: SECRETED.  
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.  
DR PIR: JK0016; LCHO.  
DR HSSP: Q28632; IAN3.  
DR InterPro: IPR001400; SOMATOTROPIN.  
DR Pfam: PF00103; hormone; 1.  
DR PROSITE: PS00836; SOMATOTROPIN.  
DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
KW Hormone; Parturition; Lactation; Pituitary; Glycoprotein.  
FT DISULFID 4 11 BY SIMILARITY.  
FT DISULFID 58 174 BY SIMILARITY.  
FT DISULFID 191 199 BY SIMILARITY.  
FT CARBOHYD 31 31 BY SIMILARITY.  
SQ SEQUENCE 199 AA; 23001 MW; 119AEB5B6278019E CRC64;

Query Match

11.0%; Score 25; DB 1; Length 199;

Best Local Similarity 100.0%; Pred. No. 1.2e-16;  
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRRDSHKIDNYLKLKCR 221  
DB 169 YNLHCLRRDSHKIDNYLKLKCR 193

RESULT 8  
PRL\_BUFA STANDARD: PRT; 134 AA.

AC P43001;  
DT 01-NOV-1995 (Rel. 32, Created)  
DT 01-NOV-1995 (Rel. 32, Last sequence update)  
DE PROLACTIN (PRL) (FRAGMENT).  
OS Bufo japonicus (Japanese toad).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Amphibia; Batrachia; Anura; Neobatrachia; Bufonidae; Bufonidae;  
OC Bufo.  
OX NCBI\_TaxID=8387;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX TISSUE=Pituitary; PubMed=8148042;  
RA Takahashi N., Yamamoto K., Kikuyama S.;  
RT Cloning of a load prolactin cDNA: expression of prolactin mRNA in larval and adult pituitaries.";  
RL J. Mol. Endocrinol. 11:343-349(1993).  
CC -1- SUBCELLULAR LOCATION: SECRETED.  
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.  
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CC -----  
CC EMBL: S69309; AAB30425.1; -.  
DR HSSP: Q28632; IAN3.  
DR InterPro: IPR001400; SOMATOTROPIN.  
DR Pfam: PF00103; hormone; 1.  
DR PROSITE: PS00266; SOMATOTROPIN\_1; PARTIAL.  
DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.  
KW Hormone; Pituitary.  
FT NON\_TER 1 1 BY SIMILARITY.  
FT DISULFID 126 134  
SQ SEQUENCE 134 AA; 15520 MW; DDC7BD7A26DB5544 CRC64;

Query Match 10.6%; Score 24; DB 1; Length 134;  
Best Local Similarity 100.0%; Pred. No. 7.7e-16;

Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRRDSHKIDNYLKLKCR 220  
DB 104 YNLHCLRRDSHKIDNYLKLKCR 127

RESULT 9  
PRL\_CHEMY STANDARD: PRT; 198 AA.

AC P33090;  
DT 01-OCT-1993 (Rel. 27, Created)  
DT 01-OCT-1993 (Rel. 27, Last sequence update)  
DE PROLACTIN (PRL).  
OS Chelonia mydas caranigra (Green sea-turtle).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Testudines; Cryptodira; Chelonioidea; Chelonidae; Chelonia.  
OX NCBI\_TaxID=8469;

RN [1]  
RP SEQUENCE.

RX MEDLINE-91146884; PubMed-2289679;

RA Yasuda A., Kawachi H., Pepkoff H.;

RT "The complete amino acid sequence of prolactin from the sea turtle (Chelonia mydas).";

RL Gen. Comp. Endocrinol. 80:363-371(1990).

CC -1- SUBCELLULAR LOCATION: SECRETED.

CC -1- TISSUE SPECIFICITY: PITUITARY GLANDS.

CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.

DR PIR: A60620; A60620.

DR HSSP: Q28632; IAN3.

DR InterPro: IPR001400; SOMATOTROPIN.

DR Pfam: PF00103; hormone; 1.

DR PRINTS: PR00836; SOMATOTROPIN.

DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.

DR PROSITE: PS00338; SOMATOTROPIN\_2; 1.

KW Hormone; Pituitary.

FT DISULFID 4 11 BY SIMILARITY.

FT DISULFID 58 173 BY SIMILARITY.

FT DISULFID 190 198 BY SIMILARITY.

FT VARIANT 55 55 I -> L.

FT VARIANT 145 145 L -> V.

FT VARIANT 148 148 P -> R.

FT VARIANT 171 171 L -> M.

SQ SEQUENCE 198 AA; 22605 MW; 8AC5B1600272053D CRC64;

Query Match 10.6%; Score 24; DB 1; Length 198;  
Best Local Similarity 100.0%; Pred. No. 1.1e-15;

Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRRDSHKIDNYLKLKCR 220  
DB 168 YNLHCLRRDSHKIDNYLKLKCR 191

RESULT 10  
PRL\_MONDO STANDARD: PRT; 228 AA.

AC O62819;  
DT 15-DEC-1998 (Rel. 37, Created)  
DT 15-DEC-1998 (Rel. 37, Last sequence update)  
DT 15-DEC-1998 (Rel. 37, Last annotation update)  
DE PROLACTIN PRECURSOR (PRL).  
GN PRL.  
OS Monodelphis domestica (Short-tailed grey opossum).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Metatheria; Didelphimorphia; Didelphidae; Monodelphis.  
OX NCBI\_TaxID=13616;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Pituitary.  
RA Kacsch B., Soos G.;  
RL Submitted (May-1998) to the EMBL/GenBank/DBJ databases.  
CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY PROMOTING LACTATION.  
CC -1- SUBCELLULAR LOCATION: SECRETED.  
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.  
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CC -----  
CC EMBL: AF067726; AAC18398.1; -.  
DR InterPro: IPR001400; SOMATOTROPIN.  
DR Pfam: PF00103; hormone; 1.  
DR PRINTS: PR00836; SOMATOTROPIN.  
DR PROSITE: PS00266; SOMATOTROPIN\_1; 1.

DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.  
 FT SIGNAL 1 29 BY SIMILARITY.  
 FT CHAIN 30 228 PROLACTIN.  
 FT DISULFID 33 40 BY SIMILARITY.  
 FT DISULFID 87 203 BY SIMILARITY.  
 FT DISULFID 220 228 BY SIMILARITY.  
 SQ SEQUENCE 228 AA; 26071 MW; 4DA2D906EF33BEA9 CRC64;

Query Match 10.6%; Score 24; DB 1; Length 228;  
 Best Local Similarity 100.0%; Pred. No. 1.2e-15;  
 Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRDSHKIDNYLKLCR 220  
 DB 198 YNLHCLRDSHKIDNYLKLCR 221

RESULT 11  
 PRL\_TRIUV STANDARD; PRT; 228 AA.  
 AC 062781;  
 DT 15-DEC-1998 (Rel. 37, Created)  
 DT 15-DEC-1998 (Rel. 37, Last sequence update)  
 DT 15-DEC-1998 (Rel. 37, Last annotation update)  
 DE PROLACTIN PRECURSOR (PRL).  
 GN PRL.  
 OS Trichosurus vulpecula (Brush-tailed possum).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Metatheria; Diprotodontia; Phalangeridae; Trichosurus.  
 OX NCBI\_TaxID=9337;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE-98325477; PubMed-9653022;  
 RA Curlew J.D., Saunders M.C., Kuang J., Harrison G.A., Cooper D.W.;  
 RT "Cloning and sequence analysis of a pituitary prolactin cDNA from the  
 RT brush-tailed possum (Trichosurus vulpecula).";  
 RL Gen. Comp. Endocrinol. 111:61-67(1998).  
 CC -1- FUNCTION: PROLACTIN ACTS PRIMARILY ON THE MAMMARY GLAND BY  
 CC PROMOTING LACTATION. MAMMOGENESIS, MITOGENESIS AND OSMOREGULATION.  
 CC -1- SUBCELLULAR LOCATION: SECRETED.  
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.  
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 CC -----  
 CC EMBL; AF054634; AAC12736.1;  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone. 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Parturition; Lactation; Pituitary; Signal; Glycoprotein.  
 FT SIGNAL 1 29 BY SIMILARITY.  
 FT CHAIN 30 228 PROLACTIN.  
 FT DISULFID 33 40 BY SIMILARITY.  
 FT DISULFID 87 203 BY SIMILARITY.  
 FT DISULFID 220 228 BY SIMILARITY.  
 SQ SEQUENCE 228 AA; 26097 MW; 25261EBB165EB1A6 CRC64;

Query Match 10.6%; Score 24; DB 1; Length 228;  
 Best Local Similarity 100.0%; Pred. No. 1.2e-15;  
 Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 197 YNLHCLRDSHKIDNYLKLCR 220  
 DB 198 YNLHCLRDSHKIDNYLKLCR 221

DB 198 YNLHCLRDSHKIDNYLKLCR 221

RESULT 12  
 PRL\_MEIGA STANDARD; PRT; 229 AA.  
 AC P1572;  
 DT 01-AUG-1990 (Rel. 15, Created)  
 DT 01-NOV-1995 (Rel. 32, Last sequence update)  
 DT 15-JUL-1998 (Rel. 36, Last annotation update)  
 DE PROLACTIN PRECURSOR (PRL).  
 GN PRL.  
 OS Meleagris gallopavo (Common turkey).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Archosauria; Aves; Neognathae; Galliformes; Meleagrididae; Meleagris.  
 OX NCBI\_TaxID=9103;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE-96206340; PubMed-8618952;  
 RA Xu M., Proudman J.A., Pitts G.R., Wong E.A., Foster D.N.,  
 RA el Halawani M.E.;  
 RT "Vasoactive intestinal peptide stimulates prolactin mRNA expression  
 RT in turkey pituitary cells: effects of dopaminergic drugs.";  
 RL Proc. Soc. Exp. Biol. Med. 212:52-62(1996).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE-91348480; PubMed-1879669;  
 RA Wong E.A., Ferrin N.H., Silsby J.L., el Halawani M.E.;  
 RT "Cloning of a turkey prolactin cDNA: expression of prolactin mRNA  
 RT throughout the reproductive cycle of the domestic turkey (Meleagris  
 RT gallopavo).";  
 RL Gen. Comp. Endocrinol. 83:18-26(1991).  
 RN [3]  
 RP SEQUENCE OF 66-229 FROM N.A.  
 RC TISSUE-Pituitary;  
 RX MEDLINE-90272435; PubMed-2349117;  
 RA Karatzas C.N., Zadworny D., Kuhnlein U.;  
 RT "Nucleotide sequence of turkey prolactin.";  
 RL Nucleic Acids Res. 18:3071-3071(1990).  
 CC -1- SUBCELLULAR LOCATION: SECRETED.  
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.  
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 CC -----  
 CC EMBL; U05957; AAB60615.1;  
 DR EMBL; U05953; AAB60615.1; JOINED.  
 DR EMBL; U05954; AAB60615.1; JOINED.  
 DR EMBL; U05955; AAB60615.1; JOINED.  
 DR EMBL; U05952; AAB60604.1;  
 DR EMBL; X51769; CAA36071.1;  
 DR PIR; S10170; S10170.  
 DR HSSP; Q28632; IAN3.  
 DR InterPro: IPR001400; SOMATOTROPIN.  
 DR Pfam: PF00103; hormone. 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Pituitary; Signal.  
 FT SIGNAL 1 30 BY SIMILARITY.  
 FT CHAIN 31 229 PROLACTIN.  
 FT DISULFID 34 41 BY SIMILARITY.  
 FT DISULFID 88 204 BY SIMILARITY.  
 FT DISULFID 221 229 BY SIMILARITY.  
 FT CONFLICT 156 156 L -> R (IN REF. 2).  
 SQ SEQUENCE 229 AA; 25854 MW; DEA530EBB2301F2B7 CRC64;



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Job time: 115 sec

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